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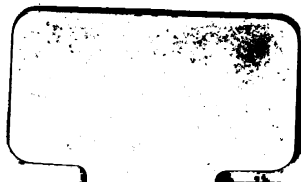
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THE
FAIRFIELD
ORCHIDS.



THE
FAIRFIELD ORCHIDS.

THE
FAIRFIELD ORCHIDS.

A DESCRIPTIVE CATALOGUE

OF THE

SPECIES AND VARIETIES

GROWN BY

JAMES BROOKE & Co.,

FAIRFIELD NURSERIES,

AND 16 & 18, VICTORIA STREET, MANCHESTER.

WITH

CHAPTERS UPON THE HISTORY, ETC., OF THESE PLANTS,

AND

AN APPENDIX CONTAINING THE SIGNIFICATIONS OF
THE NAMES.

LONDON:

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ADDRESS.

FOR many years past we have cultivated at Fairfield, and with perfect success, almost all the species and varieties of Orchids which are the most highly esteemed as ornamental plants, and which afford the best supply of blooms adapted for cutting, the demand for Orchid-flowers of the best description being steadily upon the increase in Manchester and the neighbourhood. Our stock of plants being considerable, we are willing to dispose of any of them that may be desired by other Orchid-growers, and issue the following Catalogue as a guide to what they will find in our collection.

The above was the substance of the Address prefixed to our original edition. Orchid-culture being rapidly upon the increase, and details connected with the plants being often enquired for, we are induced to give this fresh issue a new complexion, and to endeavour to render it a popular and readable Introduction to Orchidology. In this new edition, accordingly, we furnish more extended descriptions of the plants than was possible in the original. The ideas and facts connected with this vast and splendid race of plants being endless, we furnish chapters, likewise, upon the nature, the life-history, and the culture of Orchids, hoping that (excellent as is the matter already before the public) what we have to say may to some be not unwelcome. We give references, likewise, to coloured portraits of the chief portion of the species described. By consulting these, Orchid-collectors may learn, at any season of the year, what is the general appearance of the several plants, and enable themselves to

draw up lists of what they may take a fancy to, with a view to ultimate possession. Many of the books containing these portraits exist in the great libraries of Manchester and Liverpool, references to which are also supplied.

Furthermore, we give in the present edition what we hope will be found a very useful adjunct—namely, a Glossary of the Significations of the Names. The information in this Glossary has never before appeared, we believe, in a connected form. In the Glossary the names are all *accented*, with a view to showing the correct pronunciation. Those few botanical terms also which do not happen to be explained in the chapter on Structure, are here interpreted.

In yet another edition, should we be encouraged to undertake one, we shall endeavour to give some account of the geographical distribution and of the habitats of Orchids. We shall likewise indicate the first steps in the scientific classification of these plants. So far, we wish our Catalogue to be understood as making no pretension to be anything more than what we have said—a popular and readable Introduction to Orchidology; and the nomenclature to be the familiar and accustomed one, rather than such as might perhaps be published by a Reichenbach.

For the chapters in question, (excepting certain details respecting culture,) for the greater portion of the descriptions, the Glossary, and whatever gives literary complexion to the Catalogue, we are indebted to Mr. Leo Grindon, Lecturer on Botany at the Royal School of Medicine, Manchester; and to that gentleman we beg to express our grateful acknowledgments.

FAIRFIELD, MANCHESTER,
January, 1872.

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THE FAIRFIELD ORCHIDS.

I.

THE NATURE, USES, AND LIFE-HISTORY OF ORCHIDS.

THE flowers of Orchids are, without exception, the most curious and beautiful in nature. Their qualities, taken separately, would give eminence to a race of plants ; the singularity of their shapes, their delicate and aromatic odours, and the richness and variety of their colours, all being different from everything we meet with elsewhere. In orchid-flowers these charming qualities form a trio of recommendations ; and when satisfied with contemplating their hues and sweetness, we may turn to the plants themselves, and find among them some of the most remarkable in the world, as regards structure, habitations, and the general phenomena of life and renewal. Orchids, accordingly, are rapidly taking a front position in all high-class collections of ornamental plants,—the rose alone, the acknowledged queen of flowers for 2000 years, retaining her ancient and incontestable place. In this there is something very significant. Appealing as they do, to the most finished perceptions of what constitutes the *beau-idéal* of floral excellence, when the history of orchid-culture in England comes to be fairly written out, it will testify not more to enterprise and skill, than to the growth of good taste. Deficient indeed is the drawing-room vase, or the bridal bouquet or chaplet, that now-a-days, and emphatically in spring and early summer, when the orchids are in perfection, is without a Dendrobe, or an Oncid, a Calanthë or a Cœlogynë ;—wherever, in a word, the most exquisitely decorative and ornamental is required in connection with flowers, the aid of orchids must be sought, or there is a sense of the

best element of beauty being forgotten. Good flowers are not put to half the purpose nature designs them for, when they are given no place in our parlours and saloons ; and so long as they are absent, the best of houses are imperfectly furnished. For the dinner-table, the supper-table, the sideboard on festive occasions (and why not during the quiet enjoyment of private life as well ?) none are better adapted than orchids which, like the *Oncidium flexuosum*, toss out their myriad flowers in arching panicles ; or if something more solid and substantial be preferred, then the unflinching *Dendrobium nobile*, so lustrous in its bounty of mingled violet and white. No plants better harmonize with ferns and dwarf palms when a bit of indoor flower-scenery is desired ; and there need be no fear of their suffering if the temperature of the room they are placed in be not allowed to go lower than 50° during the night.

Over and above their intrinsic loveliness, orchid-flowers possess rare and engaging qualities which at the moment we may not recognize, but which win upon us daily. There is always a sound and hearty reality about them. An orchid-flower means what it says. It does not fall to pieces like a lily ; there is no shedding of petals ; no dropping away from the peduncle ; no self-decapitation, like that of a fuchsia ; no collapsing and dissolving, like a spiderwort ;—no, there is never any of this ; the orchid-flower is neither superficial, nor fugitive, nor insincere ; it may be worn even for a long evening, and be as fresh at the close as when newly gathered. If we mistake not, orchid-flowers have a grand future before them, not simply as shapes of beauty for the conservatory, to be admired and be left untouched, but as an absolute necessity even in completing indoor dress. Some poet has well called them the jewels of botanical nature ; and really, does it not seem as if they had been purposely designed for employment as *living* jewels, and specially by those who cannot reach ruby and emerald, but who can take an equal pleasure in the simplicity of these scented gems,—perishable, no doubt, but capable of endless renewal. Some of these orchids, when they *do* change, actually grow larger and more beautiful ! Witness those extraordinary varieties of the Venus'-slipper, the petals of which are only an inch in length when the flower expands, but which in four days' time grow to be a foot and a half long, and endure for three weeks ! One

reason of this long continuance of orchid-flowers (not *all*, but the immense majority) is the waxiness of their substance. Another is, that here in England they are in a foreign country, and precluded, both geographically and by local accident, from the visits of the companion insects which sport around them in their native woods, seeking their nectar after the manner of bees. For, as now well known to the curious reader, orchid-flowers of nearly all kinds are so constructed that the seed-producing organs, the stamens and pistil, remain, as it were, torpid, until some little visitor of tender wing acts the part, as Mr. Darwin terms it, of "marriage-priest." So long as the fertilization of the stigma is in abeyance, they hold on, as if in expectation:—when this is accomplished, the charm is broken, and the beauty quickly goes, say in six, twelve, or twenty-four hours. While employing orchids for personal adornment, the ladies of England may bethink them, if they care to, that the idea of so using these flowers is, after all, by no means a purely British and nineteenth century one; for we are told by a famous old botanist of a couple of centuries back, that in the island of Ternate he found the Court princesses braiding their hair with the flowers of the Letter-orchises, and reserving them for their own exclusive use. How often and how curiously are the usages of the highest civilization, when poetical, anticipated by nations the most remote and unpolished!

The orchids not only fulfil this excellent use of fostering good taste. The collection and culture of these plants opens up new fields for the legitimate employment of wealth. While their flowers supply new and exquisite materials for modest and becoming personal adornment,—which, rightly practised, is a moral, manly and womanly duty,—they greatly contribute, likewise, to advance the knowledge of physiological science. Therefore we must not be hard upon them because they supply so little of *economic* worth. Vanilla is the only product of the race that in England, at all events, is ever "utilized." Never mind. As the forest-tree, that is green for a thousand years, can leave it to the summer-poppy to be gaudy, so the orchids, filling the soul with an ever-new delight, may well leave the food and clothing question to more homely things. "The beautiful," says Victor Hugo, "is as useful as the useful—*perhaps more so.*"

Strange, however, it must always remain, that the orchids, like the glorious Proteads, should furnish so little even of what we ordinarily expect from plants. Munificent in odours, they are chary in gift of honey: none are medicinal; none are exactly esculent; even their seeds seem below the attention of the smallest birds.

Orchideous plants are distinguishable into two great classes. Some, which may be termed "ground-orchids," live in the earth, and of these we have about thirty-seven different species indigenous to our own island, the groves and meadows of which they embellish in May and June with their pretty flowers, which are often hyacinthine in figure, and usually crimson or lilac, several exhaling scent, especially after twilight. These thirty-seven include those quaint illusions, the well-known Bee-orchis, the Fly-orchis, and the Wasp-orchis. Ground-orchids of unspeakable loveliness grow also in Spain and Italy, at the Cape of Good Hope, in North America, and as far away as Chili. Few of them are at present in cultivation, though there is good promise for the future. The hardy ones appear now and then in choice gardens, but quite as rarities; and in the stove and greenhouse the tropical and sub-tropical species are quite in the minority, though, as in the case of *Disa*, and *Phaius*, and several others, we find among them some of the most attractive plants that Nature produces. It is the second section that contains the favourites, those which carry all before them. These are wholly tropical or sub-tropical, and are distinguished by their remarkable mode of life, which is truly "epiphytic,"—the plants, that is to say, perch themselves upon trees (whence they are often called "Tree-orchids"), rooting in the furrowed bark, winding their long feelers around the branches, and feeding partly upon what they find there in the shape of decomposing vegetable matter, partly upon the contents of the atmosphere. They are not absolutely exceptional to all other plants in this mode of life, having companions in epiphytic ferns, aroideous plants, and many other aerial representatives of the beautiful families for which the tropics are so famous. Prefigurements of these epiphytes exist in certain little plants of our own country, which, though not orchideous, do nevertheless very well illustrate their habits. Such are the common golden-dotted polypody, which well-known fern frequently seats itself upon an aged oak; and the dimple-wort, or

Cotyledon Umbilicus, which in Devonshire forsakes the walls, and takes to the trees. Mosses, lichens, and the extremely beautiful little plants called Jungermannias—the Orchidaceæ of microscopic Botany—are also truly epiphytic in very many of their species, but most people overlook them because they are so little. Now and then the tropical epiphytes actually creep and ramble after the manner of our English ivy; a beautiful example of which occurs in the Vanilla-plant,—so luxuriant at Syon, and in the water-lily house of the Sheffield Botanic Gardens. Epiphytes must by no means be confounded with *parasites*, such as the mistletoe, which steal the sap of the tree they lodge upon. Were the orchids “parasitic,” our orchid-houses would need to be young tropical forests!

The special *homes* of the epiphytic orchids are moist woods upon the slopes of hills, chiefly in equinoctial climates, where they suspend their graceful clusters above the head of the admiring traveller (often, alas! for his longings, at fox-and-grapes height), some mantling, like flower-epitaphs, the trunks of prostrate trees, while a few trail over mossy rocks, and a few others venture even to crags close to the shore, just as in England we may see the *Orchis pyramidalis* flourishing where the salt spray moistens the turf. The height above the sea at which some of them occur is almost incredible; the *Oncidium nubigenum*, for instance, is found in Peru at an altitude of 14,000 feet, and the *Epidendrum frigidum* where trees are unknown, and where snow is familiar. No single country is orchidaceous *par excellence*. Wherever heat and moisture are abundant, whether it be in Asia, Africa, or America, there they exist in profusion; the principal stations being the forests of Peru and Brazil, the lower mountains of Mexico, the West Indies, Madagascar, and the adjacent islands, the damp jungles of Nepal and Burmah, and the whole of the Indian Archipelago, especially New Guinea and Java. In Java alone there have already been found not less than three hundred species. Sierra Leone, and the torrid countries watered by the Niger, likewise teem with these brilliant epiphytes, showing how vast is the wealth yet to be gathered. “Such is their number and variety,” Humboldt tells us, “in the valleys of the Peruvian Andes, that the entire life of a painter would be too short to delineate all the magnificent forms which adorn those deep

recesses." Contrariwise, in regions where the heat is accompanied by great permanent dryness, such as the sandy wastes of Arabia and Africa, orchids are nearly absent. Orchids, in a word, of one kind or another, grow in all latitudes except the very coldest and the very driest, having their maximum in the neighbourhood of the equator, and their minimum in the extreme north, ceasing only upon the threshold of the frozen zone. Let the atmosphere be warm and *pure*, and gently and plentifully moistened, and they flourish: damp without warmth, foul air, and stagnant water, they abhor; they never grow in pestiferous places, and in these facts we find our first hints as to wise culture. Not that they are scattered indiscriminately. Every part of the world possesses its characteristic species, and, without much trouble, we might map it out into orchid-provinces, after the manner of the districts of the London post-office. E. C. would be the region of the incomparable Indian Dendrobies, and of the fair little Pleiones. W. C. would cover the country of the Oncids, with their countless yellow butterflies, and the Lælias, so queenly in their crispy satin and purple. S. would mean the long-tailed Angræcums and the Disa. N. would recall the sweet fantasy of our own green fields. N. W. would do for the Cypripedes of North America. Very curious features would arrest us during the survey. How comes it that those lovely Asiatic Dendrobies, the peerless Phalænopsids, and many more of the orientals, so often have *pendulous* stems, while in the orchids of America we so generally find an *erect* habit of growth? Why, again, is there so much larger a variety of grotesque configuration of flower in W. C. than exists in E. C.? Why, yet again, do the Cypripedes of cold and temperate countries often have leafy stems, while those of hot countries prefer leafless ones? And, why, in the whole breadth of the world, is there scarcely one absolutely *blue*-flowered orchid? Many orchids have a fine blue spot, or wear an apron of blue silk, but an orchid purely blue in every portion of the flower, is said to be found only in the *Herschellia* and the *Thelymitra*. One or two are named *cæruleus* and *cærulescens*; but their colour is only a delicate lilac-lavender. This almost total want of blue orchids becomes the more remarkable from the frequency of the colour in all the large nearly-related families, unless in the Amaryllids, which show much

less than the lilies and the Iridaceæ. Every other hue is possessed by the orchids in abundance and the richest variety, spotless pearl, and the intensest crimson-violet forming the poles, with everything there is in spring and sunset lying between. Orchids beset us with questions such as those indicated, and ask more riddles than ever the Sphynx proposed to the travellers. Grotesqueness of flower-shape, let us remember, so remarkable in the New World forms, is one of the very special characteristics of the entire family; and, probably, a part of the interest which orchids excite in our minds, comes of their weird outlines and expression, so totally distinct are these from the physiognomy of all other flowers in nature. It is now an old story that orchid-flowers present the *simulacra* of beasts, birds and fishes, reptiles and insects, yea, even of the human figure, as in that droll *Aceras anthropophora*, which, dressed like an acrobat, in skin-tunic of green, swings as if gibbeted, in company with some fifty other little felons. If we get this upon the chalky downs of England, what may we not look for in distant countries,—certainly for nothing less than that wonderful *Spirito Santo*, which seems a white dove with expanded wings. As for horns, antennæ, antlers, tails, ears, and other adjuncts, of shape the most eccentric,

“ Eye of newt, and toe of frog,”

there are enough to give a zoologist the agonies; and when we have done with these, there are devices and tinctures enough for the fabrication of a new heraldry. Strange, again, in a measure, that these alluring flowers should, like the telegraph, be a privilege of our own age. The ancients, it is true, noticed a few of the ground-orchids, but an epiphyte they never saw. Milton did well not to put any in his Garden of Eden. The Roman Empire rose and fell, and they remained unknown, or at least unobserved. Not until Rumphius, the celebrated Dutch botanist, went to Amboyna, Kæmpfer to Japan, and Hernandez to Spanish America, are they mentioned in literature, and by the latter it is but lightly, in lists of general curiosities. Quite unknown a century ago, was even the extent of the family. Natural enough was the thought at the time, but it is rather amusing now, in 1871, to read the opinion of Linnæus, that when the world was fully explored

it might probably be found to contain as many as a hundred different kinds! What would the father of Botany have exclaimed, could he have been shown, through Time's telescope, the fairy-land of one of our modern exhibitions! Even to men of science the orchids were very imperfectly known, till quite of late years. Persoon, in 1807, enumerates less than 400 species, including all the European ones; and of these only two or three dozen were in garden-catalogues, and scarcely half-a-dozen in cultivation. The beginning of our present abundance we owe to the liberality and the enthusiasm of such men as the late Duke of Devonshire; the private gentlemen, many of whose names occur in the glossary at the end of this Catalogue; the nurserymen who have despatched collectors east and west, at heavy personal expense; and though last, far from least, to the collectors themselves, whose perils and adventures would furnish material for entire volumes. Ah,

“Ye gentlemen of England, who sit at home at ease,”

pleasant enough for you is it to delight in the calm possession of these beautiful flowers; how many of them have been obtained for you only through unspeakable toil and the severest privations, followed, alas, in not a few instances, by sickness and death. In 1845, so diligent had been the researches, it was estimated there were, in all, probably 3000 species, resolvable into about 400 genera. Since then the explorations have been carried so much further, that the estimate has been raised to 6000, not including the “varieties” into which orchids appear to be capable of running almost as freely as tulips and roses, especially the more showy ones, such as the *Cattleya Mossiaë*, and the *Lycaste Skinneri*. Perhaps some of the so-considered “species” of to-day may prove ere long to be no more than admirable sports from some central earlier idea, after the manner of the varieties of the ferns, plants with which orchids have so many curious analogies. There seems, moreover, to be in the orchids a strong tendency to the mingling which results in “crosses” or “hybrids,” and a capacity even for change of personal features, without leaving the flower-stalk, as illustrated in the paradoxical *Catasetum*. Importations of young plants, accordingly, are never to be depended upon as simple repetitions of what we know: there is

almost always some beautiful novelty. But it is not merely new species and varieties that have been made known by the collectors. Hundreds of amateurs are now able to possess orchids, by whom thirty years ago they could not have been got for "love or money,"—this coming of the immense importations of young plants, mostly well-established seedlings, which are constantly being made, and their dispersion at moderate prices, like any other article of commerce. The plants now imported are, moreover, all of the best and showiest species, such as are likely to prove most useful to the purveyor of cut flowers, to the owner of the compact and inexpensive conservatory, and to competitors in those thrice-excellent arenas of friendly contest, our English Flower-Shows, which are in themselves one of the best results and signs of the times.

In connection with this, it is interesting to observe that orchid-culture, after we leave the neighbourhood of the metropolis, and the country-seats of the nobility, has its principal development in the manufacturing districts of Lancashire and Yorkshire. In these "practical" counties it is, more than anywhere else in Great Britain, that orchid-culture has always had its stronghold, the intelligence and good spirit which arise upon occupation with the industrial arts finding honourable outflow in the love of Nature's most consummately beautiful works.

Looking at the comparative novelty of the knowledge of orchids, of course we have to remember that our forefathers had not opportunities like our own, and that the countries producing these plants were seldom visited. But independently of that, they were not such Athenians as ourselves, who are always desiring some "new thing." The orchids need not have remained unknown because they were diminutive or short-lived. That some are pigmies is shown in the little *Drymoda*; but the *Oncidium altissimum* has golden panicles nine or ten feet in length; many Dendrobies and some of the *Lælias* measure as much from root to apex, and the reed-like *Sobralias*, in their native countries, are thrice the height of a man. A yard, perhaps, may be taken as their average stature. So with their duration. Excepting as to their flower-stems, no orchids are either annual or biennial, while many are absolutely longæval. Colonel Benson tells us of a *Saccolabium giganteum* in Burmah, which

he estimated, by trustworthy marks, to be above 100 years old. Living so long, orchids, well managed, thus offer not only beauty, but a thoroughly sound investment for capital, their money value increasing every day; and when of good quality, they fetch prices comparable with those of pictures. At the sale of Mr. Rucker's collection, in August last, an *Angracum sesquipedale* sold for 15*l.* 15*s.*, a *Vanda Lowii* for 20*l.*, a *Cattleya labiata* for 36*l.* 15*s.*, and a *Cymbidium eburneum* for 73*l.* 10*s.*! These enormous figures of course imply exceptionally fine specimens, and need cause no alarm to the intending cultivator. Orchids as a rule, are not more costly than other select plants; the culture of them is nearly as simple as that of hyacinths and other high-class bulbs; and there is no reason why every man who has a conservatory, and who will lay out a little money judiciously, and treat his plants kindly and lovingly, may not render it, with these orchid-treasures, as gay as that famous Saracen Alhambra. Plants are marvellously docile. When they die prematurely, it is not of "treatment," but of *mal*-treatment, and with orchids especially, as with women and chameleons, their life is the reflection of what is around them.

II.

THE STRUCTURE OF ORCHIDS.

THE place held by the orchids in vegetable society is near the lilies, and nearer still to the Irids. They are remote from the roses, the myrtles, and the camellia; they occupy, in a word, a chief place among the Petaloid Endogens—plants without distinction of wood, bark, and pith in their stems; having leaves that are alternate, simple, entire, curvi-nerved or straight-nerved, usually narrow or elliptical, and rarely disarticulating from the point of origin; they are marked also by flowers having their constituent members disposed normally in sets of three,—three sepals, three petals, three stamens, &c.

The Roots.—The ground-orchids have fibrous roots, with more or less of a crown, and sometimes a couple of pendulous tubers. The tree-orchids protrude roots resembling thick wire, and which are very conspicuous in the warm damp atmosphere of the stove. The surface of these aerial roots is clothed with a peculiar kind of tissue, formed

of cells containing a delicate spiral fibre. Their growing-points are green, but the spiral-fibrous cells soon come to contain nothing but air, and the skin then assumes its familiar silvery-white colour. Abundance of these aerial roots is always a sign of good health.

The Stem.—In ground-orchids this does not differ from the stems of the lily-like endogens. The tree-orchids, on the other hand, generally form clusters of green bodies of a conical, flask, or egg-shape, and 1—6 inches in length. These curious productions, which are in reality the lower internodes, very much swollen, are termed “pseudo-bulbs.” The higher internodes are likewise, in many species, much distended; often, also, they are flattened, and clothed with membranous sheaths. Owing to the epiphytic habit, the plant is generally half-pendulous, and the inflorescence of course follows the same direction, the flower-stalk usually arising either from the base of the pseudo-bulb or from its apex. Sometimes it is short, and bears, like a tulip, only a single flower; more frequently it bears a spike or raceme of flowers; or it becomes wiry and greatly elongated, arching and curving elegantly, pouring out bloom copiously from the upper portion, either in a racemose or a panicate manner, the racemes often attaining the length of 12—18 inches; and the panicle a length of several feet, at the same time ramifying freely, and owing to the slenderness and the divarication of its branches, casting into the air a cloud of blossoms suspended so lightly that they seem to float without support. Nothing can exceed the beauty of these rich and massive racemes, these ample and airy panicles; the latter sometimes taking the form of a cascade or descending stream, as in the sculptured and immaculate *Phalenopsis amabilis*; the former, as in the *Saccolabiums*, seeming the ringlets of the heroines turned to flowers. Sometimes we have a perfect fountain of slender tails, that waft with the least touch of the wind, as in that beautiful plant, the *Dendrochilum filiforme*. It is an orchid such as the last-named that shows in perfection what is the floral *productiveness* of some of these plants. We talk of palm-trees as the things in nature which most abound in blossom; those who beheld that wonderful *Dendrochilum* exhibited the other day by the Bishop of Winchester, with its estimated total of *sixteen thousand* flowers, would demur perhaps to the received opinion. As a rule, the epiphytic orchids unfold

from ten or twelve to two or three hundred during the period of their bloom, which is usually several weeks, the supply varying of course with the size and strength of the plant. Several bloom twice a year, and some are almost always developing new buds. For a *succession* of bloom, one kind following another, so that no season is actually devoid of flowers, there is in truth no department of nature that can excel a good orchid-house. When pseudo-bulbs are not present, and the stems are tall, erect, and leafy, as in the Vandas, the racemes are usually put forth from the upper axils.

The Leaves.—These present no special features, except that in a few orchises, certain cypripedes, and certain East Indian genera of the tribe *Physuridæ*, all terrestrial plants, they are painted and inlaid with beautiful colours, or embroidered with threads of gold and silver, as will presently be described particularly under the head of *Anæctochilus*. To orchideous plants in general the last-named are exactly what the Fittonias are to the Acanthaceæ. In the plain-leaved species, the form is usually long and narrow, and the substance fleshy or leathery. Such leaves are usually channelled, often recurved, and often striated or plaited. Some few orchids of the epiphytic class are deciduous, losing their leaves when their growth is completed, as happens with *Thunia alba*; and in some of the Pleiones, we have the flowers produced antecedently to the leaves.

The Flower.—In this, more than in any other part of the plant, lies the grand peculiarity of the orchid. Two of the constituent members, the “lip” and the “column,” differ wholly from everything else known to occur in plants. Before considering them, let us observe that the three outermost pieces of the blossom are the “sepals,” or collectively, the “calyx;” and that the two wings are “petals,”—organs, the number of which, in all perfect endogens, is *three*. Where then is the *third* petal in the orchid? Formerly, that handsome and remarkable piece which hangs or projects in front, and which bears the name of the “lip” or “labellum,” was supposed to be formed from it. Mr. Darwin has shown, however, that only the middle lobe of this “lip” is actually petal, the lateral lobes representing a couple of stamens, completely metamorphosed, and intimately woven to its edges, whence it is that we so often find the lip trifid.

The two stamens in question belong to a theoretical and exterior

whorl of three, the third of these three being itself abnormal, and forming part of the "column." This very curious body, which is often club-shaped and of waxy texture, consists, interiorly, of 3 styles; and as to its outer part, of 4 stamens; viz., the one already mentioned, and three others which constitute a theoretical *inner* whorl. The anther of the *one* alone is developed in a perfect state, lying upon the side of the column which is farthest from the lip; excepting in *Cypripedium*, where, instead of the *one*, two of the interior whorl are antheriferous. The stigmas of the 3 styles are themselves evident only in the genus just named. In all other orchids, two of the stigmas exist only as rudiments, and the third appears as a viscid space, above which there is a peculiar projection called the "rostellum," literally, "a little beak." The column, like the lip, is thus a composite body, consisting of three styles *plus* four stamens, the whole welded into a solid mass. The ovary or rudimentary seed-pod is *underneath* the flower, and often simulates a peduncle. It ripens, usually, into a capsule, which bursts by longitudinal clefts, and discharges innumerable seeds, so minute as to be finer than the finest possible sawdust. We say "innumerable," but Mr. Darwin has made them a subject of calculation, estimating those of a spike of the *Orchis mascula* to be no fewer than 186,300! Magnified, the seeds are found to possess a loose, delicately-reticulated, and purse-like envelope, the round embryo seeming a gold-coin in the centre. Owing to their extreme minuteness and levity, in the tropical forests they are rapidly dispersed, the wind scattering them among the trees, and the result is that wherever by any accident the bark of a branch is damaged, or that a suitable resting-place is by any means provided, these marvellous plants establish themselves, like birds building their nests. In our stoves many species of tropical orchids ripen seed abundantly, especially if a little assisted, and seedlings have been raised successfully. There seems no reason why in a well managed orchid-house, where the surface of the wall is rendered available, they should not spring up freely and spontaneously, like the maidenhair in a warm fernery, supplying plenty of young plants, and enriching our collections, no doubt, with new varieties.

The anther, above spoken of, occupies a little cavity in the

column, designated the "clinandrium" or anther-bed, sometimes having its two cells so widely divergent that the flower seems diandrous. Both cells contain pollen, but in a very anomalous condition, the grains being imperfectly developed, and cohering in masses called "pollinia." These "pollinia" are often pear-shaped, and often elongated downwards, so as to possess little stalks termed "caudicles."

Such being the extraordinary condition of the reproductive organs, the grand distinction of a "flowering-plant" as opposed to a "flowerless," or more properly, a "cryptogamous" one, a fern or a selaginella, to wit, is almost lost to view. Stamens and pistils, obvious and complete, no longer constitute a feature of the plant. Instead of separate and intelligible members, we have only this singular "column," into the composition of which enter alike filaments and anthers, styles and stigmas. How is their presence there clearly demonstrated? By the microscope, which upon our taking delicate sections of the column, vertical and horizontal, shows as many separate lines of vessels as theoretically there are organs.

As for the lip or labellum, it is generally the seat of some different colour, often a much deeper and more brilliant one, so that it frequently becomes the most showy and remarkable part of the blossom. In some orchids it is a broad shield; in others it resembles a shell; sometimes it is elegantly rolled up, beginning from the base, so as to give a grotto-like recess, or a chamber lined with purple. At times it seems to hold a little mirror of an antique oval form; at times it is mottled, or overlaid with the richest velvet. The "tail" found in certain orchideous flowers is a nectary, or honey-storehouse, usually originating in a backward prolongation of the base of the lip. In *Angræcum sesquipedale* and some of the *Habenarias*, this part reaches the length of 12—18 inches. It should be added that there are instances of the lip scarcely differing in size and shape from the sepals and petals, the flower then becoming nearly regular, and approximating that of such Irids as the *Sisyrinchium*. This happens in *Thelymitra* and *Isochilus*, also in the beautiful *Ixia*-like *Paxtonia rosea*: and reminds us of the converse state of affairs in the far-away genus *Saxifraga*, where, among a hundred regular-flowered species, the pretty and familiar one

called *sarmentosa*, or the Pedlar's Basket, stands alone in its anomalous form ; and in its speckled petals, three above and erect, and two pendulous and elongated, seems the little Orchid of the Exogens.

Looking back upon this strange history, one cannot but think that the ancient behest from the greatest of teachers might be specialized, and that as "lilies" in the olden time denoted flowers in general, the man is wise who now lifts up his heart, and begins to consider the Orchises, "how *they* grow."

III.

THE CULTURE OF ORCHIDS.

ORCHID-CULTURE, when first practised in England, was, of course, very imperfectly understood. The method to be pursued with these plants was so speculative and problematic that no one ever expected to preserve his specimens of epiphytes for more than a few months after importation, and those which survived did so rather by accident than as the result of care. Reported to grow in the hot and humid shades of tropical forests,—places where the poet's unsatisfactory dream of "eternal spring" was fancied to have realization, it was supposed that the house intended to contain the plants must face the north, so as to turn its back upon the sunshine, and that an atmosphere like steam must be constantly maintained, the whole treatment being such as no one ever thought of giving to plants in general. The result, as might have been expected, was constant failure ; and not until exact physiological principles were brought to bear upon the modes of culture, did the epiphytes become a *bonâ fide* portion of our indoor Flora. The application of these principles, though cultivators have much yet to learn from one another, has changed the whole complexion of orchid-growing. Instead of facing the north, the orchid-house, whenever practicable, now faces the south, the requisite protection from the energy of the sun being given by artificial means ; and graduated temperature, and periods of rest, are recognised as quite as needful to the plants as shelter. The truth, as regards the native habitats of epiphytic orchids is now known to be that instead of uniformly secluding themselves in the

depths of the forest, many kinds prefer its open margin, and that at times they take up their abodes upon the very summits of tall trees, where they are exposed to the full glare of the tropical sun. Even the shade-lovers desire no more seclusion than is supplied by the natural veil of the foliage when the trees are in full leaf. Orchids, as to their preferences, correspond exactly with evergreen shrubs, some kinds of which, as every one knows, thrive in semi-concealment, and even in drip, while others, placed in the shade, become sickly, and soon perish. It is not always the country a plant comes from, nor even the class of habitat its race may chiefly belong to, that is to be our guide in dealing with it as an object of culture; nor is anything more self-deceptive than to connect theories of culture with the names of places. The circumstance of a plant coming from a "tropical" country is very little to go by, for these "tropical" countries often present quite a series of different climates. What, for example, is to be argued concerning plants from "Nepal"? Lower Nepal is in India, extending into the plains of Hindustan proper; whereas Upper Nepal is so much elevated that the barometer never rises to 26 inches; and beyond, is a still loftier alpine region, bordering upon snowy peaks. So with Brazil, Peru, and Mexico. In each case the geographical name covers three or four different kinds of climate. From this it becomes evident that no single and arbitrary method can be prescribed for the culture of orchids,—a fact of which we are still more cogently assured when we hear from travellers that even in the same climate the plants occupy very different stations. But this last is only another illustration of what we are familiar with in the wild-flowers of our own country;—the *Polygonum amphibium*, for example, is equally disposed to spread, like a floating carpet, upon the lake or mere, and to clamber into the dry wayside hedge, mingling its rosy cones with the racemes of the blackberries. There is no law either as regards the species of a given genus, when extensive, as is well illustrated in the locality of the *Oncidium nubigenum*, which, as already mentioned, is 14,000 feet above the level of the sea: while of the Indian genus *Dendrobium*, the *D. moniliforme* occurs in Japan, as far north as 37° or 38°, or the parallel of Lisbon; and the *D. amulum* at Port Jackson, where it attaches itself to the branches of the *Eucalyptus*

resinifera, in the open and very dry forest-grounds, exposed in summer, to blighting winds from the north-west. It remains true, nevertheless, that many orchids require a very high or truly tropical temperature while growing; and that the popular idea of a tropical country is the proper one to associate not only with these plants, but with all other warm-country epiphytes. But the idea must not be adopted too unreservedly, for though less sweepingly true, it is more thoroughly and completely true, that what epiphytic orchids, taken as a class, most delight in, is *moderate* warmth, combined with *diffused* solar light, like that of a grove of beech-trees in June, and an atmosphere such as they breathe in their native woods, or one holding in suspension a considerable amount of moisture,—and a truly moist atmosphere, we may remember, can only be a *warm* one, as opposed to a hot and steamy one. Negatively, if orchids are to prosper, they must have their roots carefully guarded from the injurious effects of stagnant water, since in their native localities, where their supplies are received exclusively through falls of rain or the deposit of vapour, no water can possibly lodge about them, unless for a period so short as to do no harm. As to exposure to sunshine, or seclusion in comparative shade, it may prove, after all, that we should be acting more thoroughly in conformity with principles founded in Nature, if we tried every plant, (no matter how dense the shadiness of its original habitat,) *first in the sunshine*, ascertaining thereby how much sun it can bear without detriment, and transferring it, if need be, and by degrees, to places of deeper and deeper shadiness—for the sun is the lord of all life and beauty, and many things that are found growing habitually in the shade, may be there only through some accident in the “struggle for life,” and do far better, or at all events quite as well, in the glow of the sunbeam. By some orchids, without question, sunshine appears impossible to be sustained, except, perhaps, during the mid-winter months, and of these, *Odontoglossum Bluntii* is a notable example; but it may still be well worth trying how much sunshine a plant can receive, and be none the worse for it,—if not all the better,—before it is stationed, theoretically, where the beams from heaven cannot penetrate. The whole matter of temperature, or the amount of sunshine that plants do best in, probably requires revision; for

it is certain that what the thermometer tells us as to the temperature of the atmosphere in which they exist, relates only to a moiety of the solar influence. The effect of the sun's light and heat in playing upon the plants themselves, which seem, as it were, to absorb it; and its influence upon their roots, especially when so much exposed as are those of orchids, has still to be measured. It is known already, that plants which come from the mountainous parts of tropical countries require a higher atmospheric temperature than that of their birthplace, which appears to imply that the deficiency of direct supply to their surface in the shape of sunbeams has in some way to be made up.

Food, the orchids, like all other organised bodies, require, of course. They cannot subsist either upon air or pure water; and though the story reads prettily enough of the Chinese air-plants—flowers said to be so fairy-like in constitution as to be independent of gross terrestrial aliment, when brought to the test of physiology, it will not stand. Some species of the genus *Aërides* (like the orpine among the sedums) are capable of existing, there is no doubt, suspended in the air by a bit of string, but it is only for a while:—like all other plants similarly treated, eventually they succumb. What food is to be given to them, and how it is to be supplied, is a question that has long been disputed, but it is one which our practice at Fairfield enables us to answer readily:—the best and easiest way, at all events for the suspended epiphytes, is the one most natural to the plants themselves, and that is to let them feed after their own manner, from an atmosphere saturated with moisture which contains the products of some simple vegetable matter undergoing decomposition. To be dosed from a watering-pot with manure-water a little diluted, is *not* natural to them; aqueous in form their food *must* be, but it must be of the nature of water a *little strengthened*. The most easy and natural formula we say, is *atmospheric precipitation*, the fermenting vegetable material being so located in the orchid-house, as to be a source of no annoyance either to visitors or to workers therein; and at the same time to be able to communicate its products freely to the atmosphere. The material decidedly the best to employ, is tanners' refuse bark, with the addition of a small quantity of stable-manure. If hot and rotting manure be introduced, nothing

is more certain than the extrication of acids, which vitiate the atmosphere, and, of course, act most deleteriously. *Purity*, above all things, is the key-note to the prosperity of orchids, and the more foul the food administered to them, the more opposed is it to their natural likings. When in pots, the best material to employ is good rough fibrous peat, broken into small lumps, and prevented from compacting by the admixture with it of fragments of pottery or lumps of charcoal. Purely terrestrial orchids usually need the addition of some stronger material, but in no great quantity. So that concerning *soil*, the orchid cultivator need give himself but little trouble. Tied to a piece of tree-branch, or placed in half a coconut husk, or in open basket-work, or in a light and perforated earthen pot, with a loose and convex bottom, such as will guarantee sure drainage, the orchid needs the protection only of a little moss, hypnum or sphagnum, according to circumstances. Warmth and moisture strengthened as above described, are the grand essentials. Water (except during their resting season) no doubt many, perhaps all, are willing to receive without stint : it is never injurious to them provided they can freely dispose of the surplus. Many orchids, indeed, can hardly have too much moisture while making their growth, provided there be no stagnancy. When all the means at our disposal have been exhausted, still we cannot give moisture enough, at least without risk of this stagnancy, so abhorrent to the plant ; it is a point of far greater importance than ten degrees of heat more or less. We might expect such to be the case, from the narratives of collectors, who state that orchids are often found in close proximity to waterfalls and mountain-streams, and that "some, *Eriopsis biloba* for example, frequently send their thick roots into the water itself." Of course, when in a dormant state, the supply of moisture has to be greatly reduced as well as weakened ; all that is then required being what will prevent the herbage from shrivelling.

No doubt it is because of this impatience of surplus and stagnant wet, that most of the tender kinds of orchid are found to thrive so much better when attached to a block of wood, than if treated in any other manner. Nature herself, in her general allocation of the orchids, seems to set the example. For it is where the atmosphere is heavily saturated that they are reported to grow at considerable

elevations upon the trees ; whereas with a greater dryness of climate they descend, until at last they settle nearly upon the surface of the ground, or upon rocks. No soil or temperature will avail orchids during *drought*, and contrariwise (if it may be allowed so to express it), any soil is good when the temperature and atmospheric humidity are carefully regulated. The main points, however, are purity and salubrity in the surroundings. These are not more important among the conditions which we *cannot* see, than perfect neatness and the most scrupulous cleanliness in what we *do* see.

Perhaps, after all, it is a mistake to be too precise in efforts to copy the arrangements of Nature. Holding the plants under strictly artificial conditions (and none more intensely artificial than that of living under glass), the most prudent course may be to ask, not so much how were they specially circumstanced at home, but what contrivances of our own, now that they are prisoners in a distant country, will promote their health and vigour, and induce them to be most flowery? We cannot give them one of their natural conditions of growth, precisely as they have it abroad,—all we can do is to substitute the best we may. Many, again, of the identical sorts for which peculiar treatment is recommended, grow when wild, as to individuals, as said above, in very dissimilar habitats, whence it follows that no single rule, even of artificial treatment, can be pronounced to be necessarily the best. Partly to this circumstance are to be attributed, no doubt, the conflicting opinions of orchid-growers as to what is best for particular species ; and, as long as the plants naturally occupy various habitats, so long will views as to treatment remain discordant,—and the treatment, it is to be hoped, prove successful. It would seem to be with orchids much the same as it is with ferns,—individuals of the same species of fern being often observed flourishing in habitats the most dissimilar, as in thick woods and upon limestone walls, upon hedgebanks and in the mouths of wells, to imitate all of which in a fernery, nobody ever thinks of attempting ; and, even were it practicable, there would probably be no improvement in the complexion of the plants. Easily and soon contented, they readily accommodate themselves to the new surroundings, asking only for the simplest supplies. Plants treated in a simple and straightforward manner, or in the way we recommend for

orchids, look as if it were no part of their nature to give real trouble, and this we verily believe to be the case; we believe, moreover, that while difficulties need not be manifold, certainly there is no necessity either for their being multiplied, for it is pretty certain that many so-called difficulties are of gardeners' own inventing. The true doctrine of orchid-culture will have to be established, not so much upon the facts of Botanical Geography, as upon observation of what is most salutary to the plants while living in confinement in the climate of England; and this consists most frequently, not in nursing them as if they were invalids, but in placing them in genial conditions of warmth, renewal of fresh air, and receipt of simple food, and then *letting them alone*, except as regards keeping clean and protecting from vermin. Remember, all the while, that to grow orchids, and to *flower them well*, and year after year, are two very different things, and, in fine, that to attempt to grow them *too fast* is certainly a mistake.

Very important in the management of orchids is the matter of Rest, which may be considered, moreover, from two points of view: the rest which the plant naturally requires, and that which our climate renders it most convenient and prudent to allow them. Orchids, like all other plants, whether natives of hot, or cold, or temperate countries, absolutely need periods of repose. If a gardener were to be told that he ought to keep his vines or his indoor peach-trees in a state of constant activity, he would not be very willing to accede to such a doctrine, and yet many a gardener has committed himself to that identical error in regard to orchids. The mistake is probably referable to a wrong reading of the fact that in equatorial countries there is "no winter." It is true that in such regions (unless there be mountain peaks of great altitude) there is never either frost or snow, and that in many climates there is not even a cold season; but it does not hence follow that the vegetation of those countries needs no cessation from active growth, the truth being that the plants *do* cease growing for a while, only under the influence of dryness instead of cold. In the tropics the alternation is of a dry period with a wet one. When the dry period commences, growth is speedily arrested by the fervour of the sunbeams and the parching condition of the atmosphere; the current of life in the

trees, previously so animated, becomes languid ; herbaceous plants, like many in our own gardens in October, become denuded, and even disappear down to the crown of the rootstalk ; even arborescent plants lose a portion of their foliage, and flowers become few and far between, vegetable nature, as a whole, presenting an aspect of quiet and slumber exactly analogous to that induced by the advent of winter in such countries as England. On the Arracan mountains, after the dry season had set in, the trees, Col. Benson tells us, "had dropped their leaves, the jungle-grass was burnt up, even to the elevation of 1,500 feet ; the hills were bare, and the stems of the leafless trees were charred and scorched, giving the whole country thereabouts a burnt, black, desolate appearance. . . . The thermometer could not have been less than 120° in the shade." By-and-by the season of rain recommences, the showers at first descending gently, as if to prepare the plants for what follows, which is an abundance that in northern latitudes we have little conception of. Soon the entire surface of the ground becomes saturated ; the life that had been suspended bursts forth anew, and there is a green and beautiful rejuvenescence on every side, which has its parallel only in the unspeakable pouring forth of blossoms of all hues. "Dendrobies," continues the Colonel, "during the hot season, are leafless, standing upon the trees like dried sticks." It does not necessarily follow that the dry season is everywhere the *hottest*. In the climate in which the *Cattleya labiata* grows, according to Mr. Gardner, at an elevation of 2,000 feet, "the hot season is also the season of rains. It is then that the mass of the orchids, and of almost every other tribe of plants come into flower." Exceptions likewise occur as to the decided alternation of wet and dry as above described, as we may gather from the picturesque descriptions given by Mr. Bates in his charming book, "The Naturalist upon the Amazons." First, as to the general appearance of the forest in those regions, he writes as follows :—"The reader who has visited Kew may form some notion of it by conceiving a vegetation like that in the great Palm-house, spread over a large tract of swampy ground ; but he must fancy it mingled with large exogenous trees covered with creepers and parasites, and figure to himself the ground encumbered with fallen and rotting trunks, branches, and leaves, the whole

illuminated by a glowing vertical sun, and reeking with moisture." Then, a little further on, in reference to the climate: "We used to rise at early dawn. At that early period of the day the sky was invariably cloudless (the thermometer marking 72° or 73° Fahr.); the heavy dew, or the previous night's rain, which lay on the moist foliage, becoming quickly dissipated by the glowing sun, which, rising straight out of the east, mounted rapidly towards the zenith. The heat increased towards two o'clock (92° to 93° Fahr.). The leaves, which were so moist and fresh in early morning, now become lax and drooping; the flowers shed their petals; towards evening life revives again. The days are more or less like this throughout the year in this country. A little difference exists between the wet and the dry season; but generally the dry season, which lasts from June to December, is varied with showers, and the wet, from January to June, with sunny days: the result is there is no hibernation; plants do not flower or shed their leaves, nor do birds moult, pair, or breed simultaneously—in the equatorial forest day and night are always of equal length—budding, flowering, fruiting and leaf-shedding, are always going on in one species or another."

"In one species or another," which is only another way of saying, that they take it in turn to rest. That there is an inherent disposition in all plants, either to hibernate, in the literal sense of the word, or to rest, is perfectly certain. It is manifested either when heat is diminished, or when the supply of moisture ceases, or there may be a combination of the two causes. Consequently, in the treatment of our orchids we must not think to deviate from the general law, though it is true that in certain species of *Masdevallia*, *Odontoglossum*, and other genera from the Peruvian Andes, there seems a capacity for everlastingly going on growing. Species which form pseudo-bulbs, whether large or small, contain in those parts a considerable amount of moisture, and will bear considerable dryness during their rest without harm; and if much checked while drying, they will flower more freely if the growth has been previously well matured. Sorts, on the other hand, like the various species of *Aërides*, *Saccolabium*, and *Phalenopsis*, particularly when the individuals are small, having no pseudo-bulbs or reserve, must not be allowed to get so dry as to shrivel during their rest, or the plants may be much

checked, and in some cases die, or take a considerable time to recover. Species again which come from considerable elevations, say 7000 to 8000 feet, where the temperature can never be high, and where there is an abundant supply of moisture all the year round, of course do not require to be kept as dry during their resting period as East Indian sorts, which at the corresponding period are almost dried up.

The best season of rest for the majority of orchids, as Mr. B. S. Williams has well pointed out, is from about the beginning of November to the end of February. This general fact, however, does not interfere with our having plenty of bloom at Christmas from the "winter-flowering" species.

In the following Catalogue, those species and varieties marked *a*, *b*, *c*, require respectively, hot, moderate, or cooler temperature; *a a*. very hot, always 70° to 90°; *c c*. very cool, or an ordinary rather close greenhouse, 35° to 45°.

a. High temperature, from 70° to 90°, with plenty of moisture when growing; 60° to 70°, and dry when at rest.

b. Medium temperature, or from 60° to 70°, with plenty of moisture when growing; 50° to 60°, and dry when at rest.

c. Low temperature, or from 50° to 60°, with plenty of moisture when growing; 40° to 50°, and dry when at rest.

All orchids when in flower should be kept free from damp; consequently sorts growing in cool houses, when in bloom, require in winter a slight increase of temperature to dry up damp. Injury is often caused, however, in winter, by a sudden rise of *fire-heat*, though little or no harm results from a rise induced by *sun-heat*. Care should be taken, accordingly, especially in mid-winter, that the temperature be not raised too rapidly. Rather, in severe weather, let there be a depression of a few degrees than resort to over-strong fires, which will over-dry the atmosphere.

When marked *a b*, as in the case of *Dendrobis*, the plants require greater heat while growing, but if wished to flower freely, they should be in the lower temperature, 50°, or even 40° to 50° when at rest; though if this is not of consequence, they would make more growth if kept in more heat. The same may be said of other orchids, which, if not strong enough to flower, would be better kept growing, or they

may flower themselves to death. These temperatures are safe to keep the plants in good health. Some writers advise their being kept much cooler; and this perhaps may be done, more or less successfully, in climates superior to that of Manchester; but in these parts it is unsafe, and we would advise no more to be tried than is necessary for experiment, lest they should not be sufficiently ripened before winter. A great proportion can be grown with very little or no artificial heat during summer, and as these as well as ferns thrive near town, they are especially adapted for growing even in the most smoky places. Where any sort requires peculiar treatment it is mentioned.

There is no occasion to construct a house specially for the growth of orchids. As implied above, many kinds do perfectly well in the ordinary stove, mingled with other plants, while others may be grown in the greenhouse; and while it has been shown that many, at all events, do not need a high temperature, it is equally true that many associate admirably with *vines*. Good grapes may be grown in connection with beautiful orchids, as shown by the success that has attended the practice of Mr. Robert Warner,* who asserts, moreover, that "there are few orchids worth growing which might not be cultivated under vines. Many even of the East Indian ones do well under this *régime*. It is only some few species of *Vanda*, *Aërides*, and *Phalænopsis* that cannot be so cultivated." One of the checks to the general cultivation of orchids,—namely, the supposed necessity for a large expenditure under the item of fuel,—is thus got over, and we gain a twofold advantage, at once saving our coal and securing both flowers and dessert. The fancy, nevertheless, is in favour of distinct and independent houses for orchids, and where the collection is very large, and is made a specialty of the establishment, whether private or professional, it is probably indispensable that they should be kept by themselves. The house may then, for convenience sake, be divided into three compartments, by means of glass partitions, so that the needful temperatures may be preserved in each; and in order to enjoy the beauty of the plants to the utmost, as they successively come into bloom, it is well to have a *fourth* compartment, of the nature of a vestibule, where they can be tastefully arranged, with inter-

* For details, see *Gardeners' Chronicle*, September 10, 1864.

mixture of Begonias, &c., and give to the visitor (who need penetrate no further) a delightful sense of *éclat* and fragrance, unmarred by the disagreeables of a high temperature and steamy atmosphere. A vestibule of this kind forms the first portion of the Orchid-house at the Manchester Botanic Gardens, and well deserves general imitation. The three compartments of such a house would then receive the names, as we advanced, of the New Granadan or Cool, the Brazilian, and the East Indian.

Since the above was written the following excellent remarks, endorsing our own views, have appeared in the *Gardeners' Chronicle*:—
“It must always be remembered that plants in a state of Nature grow, not necessarily in the localities best suited for them, but where they can. The home gardener is very often enabled to place his charges under more favourable conditions than they enjoy in their own homes. The very absence of competing plants is in itself an enormous gain, and one which the gardener, with his wits about him, and moderate appliances at command, can in most instances secure. On the other hand, there are other circumstances, such as the intensity of light in tropical countries, which favour some phases of vegetation to a degree not realisable, in our more clouded atmosphere, by any art of the gardener. It follows from this, that the best gardener is not he who exerts all his efforts in the attempt to imitate the conditions under which any particular plant may happen to grow in its native country, but he who uses his skill in the endeavour to grow the plant to the best advantage under the conditions at his disposal. To endeavour to imitate in our stoves all the conditions of a tropical climate is to strive after the unattainable; to avail oneself to the fullest extent practicable of the circumstances and conditions under which plants will grow in this country is to deserve success, and to a large extent, it may be added, to command it. Moreover, we must never lose sight of the requirements of the plant as growing in its own country, and the requirements of the gardener who holds it in subjection here. In the one case leafage to utilise every sunbeam and drink in every breath of vapour or of gas; in the other only so much foliage as

shall ensure the production of brilliant flowers and well ripened fruit.

“The gardener must have a thorough knowledge of general principles to begin with, and then he must have sagacity and tact enough to know how to apply them to varying conditions and requirements. He can get his knowledge of general principles from books or lectures, but his practical sagacity must be developed by experience. Books, or the lessons of men of science, will supply him with the ingots, but it is he himself who must mint those ingots into serviceable coin.”—(*Nov.* 4, 1871.)

DESTRUCTION OF INSECTS.

INSECTS attacking orchids may be destroyed as under:—Cockroaches and crickets, by placing bell-glasses, bottles, smooth or glazed pans, so that the sides are in a slanting position, and filled with treacle and water, in which they drown themselves. Woodlice may be destroyed by placing potatoes cut in halves about the plants, which should be examined every day till they disappear. Green fly may be killed by smoking, but this must be done very carefully with good tobacco-paper, or the leaves of some will suffer. If 1 oz. of saltpetre be dissolved in water, by boiling in a small pan, and sprinkled over 1 lb. weight of the paper, or the paper be soaked in it, the strength of the paper is doubled without much increasing the risk of burning; still only half quantity must be used, and if a certain weight be not strong enough for a house, it may be gradually increased. Three smokings on successive nights will kill thrip; or for either thrip, bug, spider, or scale, if the plants be washed with a mixture of 1 oz. bitter aloes and 1 oz. tobacco to a gallon of water, it is safer than mixtures containing soft soap or turpentine, which are apt to burn the plants, or to spoil the leaves if it get in the crowns. The plants should be washed immediately on its appearance, and be examined about once a week after, and if done as soon as the enemy is seen, and not allowed to spread, there is little difficulty in keeping them clean. Ants may be destroyed by a few fresh unpicked bones being placed for them, or sponges wetted and filled with sugar, or treacle in bottles or pans. Slugs may be collected by a little bran placed under some cabbage leaves, or

pieces of bark with the hollow side down, which is also a good trap for woodlice.

MEMORANDUM AS TO PRICES.

THE following catalogue contains only such sorts as are really useful, and which being in general demand, are kept regularly in stock. When no price is attached, the plant is scarce, and if the stock were sold out, might be difficult to replace, unless fresh importations should be made, and were these to be large, the price would be considerably reduced. Of these, prices can be given on application. The prices quoted are for fair-sized established plants, varying in size with the varieties. Small plants can in some cases be had at two-thirds or half the quoted prices, and large plants at proportionate prices. It was remarked above that orchids are within everybody's reach. We may add that many of the finest species are the least expensive, as well as the easiest to cultivate. Slow-growing species, and such as are difficult to propagate, must of course always be high-priced. There are plenty, nevertheless, which are capable of being rendered "orchids for the million," and of being diffused, like the Fine Arts, which once were deemed the exclusive privilege of the wealthy, but are now the universal addendum of intelligent home-life.

PRICES FOR COLLECTIONS OF ORCHIDS.

The Selection left to J. Brooke & Co.

12 really good, free flowering, beautiful sorts	5 guineas.
24 ditto, including rarer sorts	10 to 20 „
50 ditto, very fine collection.....	30 to 50 „
100 ditto, the higher priced, including fine and many very rare specimens	50 to 100 „

Gentlemen commencing collections, or having only a few plants, the names of which may be given, would be supplied in this way with sorts of sterling merit, and much more cheaply than if they made their own selection from the Catalogue.

EXPLANATION OF REFERENCES TO COLOURED PORTRAITS.

THE following is a list of Books containing coloured portraits of the orchids described in the following pages,—so far, that is, as the species have yet been figured. Many orchids requiring a folio page to do them justice, can only be represented in 8vo, at some sacrifice; enough, however, can generally be given of the plant, if only two or three blossoms, to supply a fair notion of its appearance. A much more serious difficulty exists in regard to the representation of the *colours*. Not only are these often quite different from the hues of any other description of flowers, and extremely difficult for the most accomplished artist to imitate, but they often vary extremely in individuals. Hence in half a dozen pictures of the same species of orchid, there may be found almost as many different shades of ground-colour. The most faithful and characteristic of any yet produced, are probably those published by Mr. Warner.

For the guidance of residents in Lancashire and Cheshire who may desire to consult the respective works, we indicate also the local Libraries in which some of them are contained :—

- A. Chetham Free Library, Manchester.
- B. Campfield Free Library, Manchester.
- C. Portico Library (subscription), Manchester.
- D. Library of the Botanic Gardens (free), Liverpool.
- E. Brown Free Library, Liverpool.

Those marked F are in our own possession, and of course open for reference. We also possess many detached drawings, culled from various sources. These, likewise, are indicated by an F, placed after the description of the species they depict :—

- A. B. Wallich, *Plantæ Asiaticæ Rariores*. 3 vols. folio. 1830-1832.
- A. Lindley, *Sertum Orchidaceum*. Folio. 1838.
- D. Lindley, *Collectanea Botanica*. Folio. 1821.
- A. C. E. Bateman, *Orchidaceæ of Mexico and Guatemala*. Elephant folio. 1843.
- Hooker, *Century of Orchidaceous Plants*. 4to. 1849.
- F. Bateman, *Second Century of Orchidaceous Plants*. 4to. 1867.

- B. F. Warner, Select Orchidaceous Plants. Folio. 1862-1865.
 F. Warner, Second Series. Folio.
 D. Smith, Exotic Botany. 2 vols. 4to. 1804, 1805.
 B. D. E. Hooker, Exotic Flora. 3 vols. 8vo. 1823-1827.
 B. E. Paxton, Magazine of Botany. 16 vols. 1834-1849.
 D. The Same. Vols. 4 to 16.
 D. Gardeners' Magazine of Botany. By Moore and Ayres.
 3 vols. 1850, 1851.
 Paxton, Flower-garden. 3 vols. small 4to. 1853.
 B. Botanical Magazine. 8vo. Vols. 1-68. 1787-1842.
 D. Ditto (complete). Vols. 1-97. 1787-1871.
 D. Botanical Register. 8vo. Vols. 1-23. 1815-1837.
 C. D. Do. New Series. Vols. 24-33. 1838-1847.
 B. E. Blume, Collection des Orchidées les plus remarquables
 de l'Archipel Indien, &c. Folio. 1858.
 F. Louis Van Houtte; Flore des Serres et des Jardins de
 l'Europe. Vols. 1-20 (or up to 1871).
 F. L'Illustration Horticole (Ambroise Verschaffelt). 1st and
 2nd series. Vols. 1-16. 1845-1869.
 F. Do. 3rd Series (Linden). 1870 onwards.
 Bateman, Monograph of the genus *Odontoglossum*. Folio.
 1864.
 The Floral Cabinet, by Knowles and Westcott. 3 vols.
 1837-1840.
 The Botanist, by Maund and Henslow. 5 vols. 1839
 onwards.
 Pescatorea, Iconographie des Orchidées, par J. Linden.
 Brussels, 1851-1860.
 Loddiges' Botanical Cabinet. 20 vols. 1817, onwards.
 B. Wight's Figures of Indian Plants. 1852. Vol. 5 (uncoloured).
 Illustrations of Orchidaceous Plants (100 species). By Thomas
 Moore. 8vo. 1857.

DESCRIPTIVE CATALOGUE.

ACINETA.

NOBLE epiphytic or sub-terrestrial evergreen orchids from Central America; the pseudo-bulbs thick and angular, the leaves ribbed, the flowers in pendulous racemes, large, fleshy, yellow or purplish brown, and agreeably fragrant. They require to be grown in baskets constructed of wood or galvanized iron, the racemes being produced from near the base of the plant, and needing space in which to suspend themselves.

1. **A. Barkerii** [*δ*]. Mexico, inhabiting dark ravines. 1837. Pseudo-bulbs 5—7 inches long; the leaves 2 feet in length, and erect, or nearly so. Scapes from the base of the pseudo-bulbs, terminating in pendent racemes of 15—25 sub-globose flowers of a beautiful yellow and crimson, the unexpanded ones tinged green. May, June; lasting, if kept dry, for several weeks. . 21s. to 42s.

Pact. Mag. of Bot. 14, 145; Bot. Mag. 72, 4203; Bateman, Mex. and Guat. pl. 8. (The two last as *Peristeria Barkeri*).

2. **A. Humboldtii** [*δ*]. Columbia and Venezuela. First flowered in England in 1842. A truly noble plant; the pendulous racemes 2 feet long, and the great red and spotted flowers recalling those of *Stanhopeas*. March, April. 21s. to 31s. 6d.

Bot. Reg. 1843, pl. 18 (as *Peristeria Humboldtii*). Moore, pl. 56.

ADA.

3. **A. aurantiaca** [*c*]. A rare and beautiful evergreen orchid from New Granada, where it grows at an elevation of 8500 feet. Stem erect. Racemes terminal, pendulous, 4—10 inches long, the blossoms individually clear orange-colour, in form somewhat resembling those of a bluebell, but with elongated segments, and, although not expanding, very effective when the plant is well grown. Autumn and early spring. 42s. to 63s.

Bot. Mag. 90, 5435; Bateman, Second Cent. pl. 113.

AËRIDES.

A large genus of very fine evergreen epiphytes, natives of the hottest parts of Asia, both insular and continental, where they grow upon trees which overhang rivers and streams, and in almost every

instance strikingly ornamental. The stems are destitute of pseudobulbs, 2 to 4 feet high, firm, erect, and stately, with large and fleshy roots shooting out like thick wires from the lower portion; the leaves are long and narrow, disposed, *Agapanthus*-fashion, in two opposite ranks, gracefully dependent at the ends, and, as a rule, leathery and unequally truncated. From the axils of the upper ones, in most of the species, come out long and cylindrical clusters of waxy flowers, not so large as in many other orchids, but of very pleasing hues, presenting beautiful intermixtures of white, lilac, and rose, and remarkable for the peculiar curvature of the lip, which gives them a certain resemblance to the blossoms of the garden Balsam. These glorious racemes are long enduring, and in many cases exhale odour worthy of the Spice Islands, and so powerful that the house in which the plants are kept is perfumed in the same way as by the *Stephanotis*. April, May and June are the principal months of their production. The species fall into two very distinct sections, the characters of which it often becomes convenient to remember. In the first, represented in *odoratum*, the lip is cut into three or even five lobes, of nearly equal length; in the other, represented in *maculosum*, the lip is undivided, or has only a couple of basal ears.

Even when out of bloom, these plants have a noble appearance; and it is not unworthy of note that the foliage presents the maximum development of the idea which has its familiar rudiment in the common English tway-blade, *Listera ovata*. For in this the two leaves present the first step in the distichous arrangement which culminates so effectively in the illustrious exotics from Asia, helping to show that accurate knowledge of foreign orchids is helped onwards, not a little, by acquaintance with even the simplest of our wild ones.

4. *A. affine* [a]. Sylhet, 1837. Stems 2—3 feet high. Racemes cylindrical, 9 inches to 2 feet in length; the abundant flowers white and deep rose-colour, spotted with purple. One of the finest orchids remitted from the fertile East, failing only in want of perfume. In its native countries, blooms during the hot season; in England, in May. Three to four weeks. 42s.

Lindley, Sertum, pl. 15. (The Bot. Mag. *affine* [70, 4049] is *A. roseum*. The ready distinction is found in the jagged extremities of the leaves of *affine*, a character of which there is in *roseum* no sign.)

5. *A. affine superbum* [a]. Sylhet. 63s.

A. Brookeii. Mr. Bateman's name for the *Aerides crispum*.

A. cornutum. The same as *odoratum*.

6. *A. crispum* [a]. In habit this beautiful species is stiff and erect; the racemes extend to the length of a foot, and are very distinct in figure, while in the magnitude of the blossoms it excels every other, the lip alone being more than an inch in length. This part of the otherwise pure and brilliantly white flower is beautifully

charged with rose-colour. Peninsula of India, 1840. June, July, blooming very freely. 42s. to 63s.

Bot. Reg. 1842, pl. 55; Bot. Mag. 75, 4427; Paxt. Mag. of Bot. 9, 145.

7. *A. crispum Lindleyanum* [a]. Coonoors. A richly coloured variety of the preceding. 63s. to 84s.

8. *A. crispum Warneri* [a]. Bombay. Leaves rather small; blossoms white, with rosy spots. June, July. 42s., 63s., 105s.

9. *A. cylindricum* [a]. Coimbatore, 1856. Stems 18 inches long, flexuose, terete, and, when the plant is growing wild, probably pendulous. Leaves somewhat cylindrical. Flowers rather larger than in others of this genus, lateral, solitary or in pairs, and white or blush-coloured; the lip inclining to red, and having the base of the central lobe touched with yellow. 105s.

Bot. Mag. 83, 4982.

10. *A. Fieldingii* [a]. India. One of the finest and most valuable orchids in cultivation, growing 2—4 feet high, and producing yard-long and branched racemes of large white and rose-coloured flowers that are beautifully mottled. May—July, lasting four weeks. 84s. to 105s.

Popularly known as the "Fox-brush *Ærides*."

11. *A. Larpentæ* [a]. East Indies. Flowers cream-coloured, spotted rose. June; three weeks. 84s. to 105s.

12. *A. Lobbi* [a]. India. Of this free-blooming species there are many distinct varieties, all very beautiful. June, July. 31s. 6d., 42s., 63s.

L'Ill. Hortic. 15, 559.

13. *A. maculosum* [a]. Bombay, 1844. Dwarf in habit, the foliage close and compact, the flowers in many clusters from among the upper leaves, and decidedly panicked; the large and crimson lip quite entire, and nearly flat; the colours of the sepals and petals resembling those of *affine*, or pale rose, spotted all over with purple, but having scarcely any admixture of white. June, July; four weeks. 21s., 42s., 63s.

Bot. Reg. 1845, pl. 58; Paxt. Mag. of Bot. 12, 49.

A. maculosum Schröderi. See *A. Schröderi*.

14. *A. nobile* [a] India. A magnificent species, attaining the stature of 5 feet, the pendulous racemes 2—3 feet long, frequently branched, and usually 50—60-flowered, the blossoms individually white, shaded and spotted with rose. June—September; four weeks. This grand plant is nearly related to the *A. suavissimum*, of which it is probably a variety, and is particularly valuable from its blooming so late in the season. 42s. to 63s.

Warner, pl. 11.

15. *A. odoratum* [a] India, China, and Cochin China, 1800. Stems 3—5 feet high; racemes pendulous, longer than the leaves; the flowers white, pink at the tip, and delightfully fragrant. Supplies the best example yet discovered of a veritable "air-plant," life being sustained for many months though the rootless stem be suspended by a bit of string, and the foliage left to feed upon the atmosphere. June, July.

Bot. Mag. 71, 4139; Bot. Reg. 18, 1485; Fl. Cab. 2, 75.

Also called, or at least in some of the varieties, *A. cornutum*. The original *Epidendrum flos-aëris* of Linnæus, Sp. Pl. 1348, described by Kämpfer in his account of Japan, p. 869, is the *Aërides arachnites*, by Blume called *Arachnis* or *Arachnanthe moschifera*, and by Lindley regarded as a *Renanthera*.

16. *A. odoratum majus* [a]. 10s. 6d., 21s., 42s.

17. *A. odoratum purpurascens* [a]. Flowers flesh-coloured, spotted purplish-rose. 42s.

18. *A. odoratum purpurascens grandiflorum* [a]. 63s. to 105s.

19. *A. quinquevulnerum* [a]. Philippines, 1838. Flowers white, speckled with crimson, and remarkably characterised by the possession of five purple stains, one at the tip of each sepal and petal. Nearly allied to *odoratum*, but differing in the five stains, and in the middle lobe of the lip being serrated. Scent faint, but agreeable. August, September; valuable in blooming so late. 84s. to 105s.

Lindley, Sertum, pl. 30; Paxt. Mag. of Bot. 8, 241.

20. *A. roseum* [a]. Leaves leathery, distichous, and channelled, their ends roundly two-lobed. Racemes gracefully half-pendulous. Sepals and petals acute, blush-coloured, with crimson spots; lip perfectly entire and tapering, and of the same length as the three-winged ovary. These peculiarities constitute the distinction between the true *A. roseum* and the *A. affine*, which last has truncated leaves with jagged extremities; stiff and erect racemes; blunt and almost rounded sepals and petals, and a more or less dentate lip which exceeds the ovary. Rather dwarf in habit. June, July. Rangoon and Moulmein, upon the plains. 10s. 6d., 21s.

Paxt. Fl. Gard. 2, 60; Bot. Mag. 70, 4049 (as *affine*).

21. *A. Schröderi* [a]. Apparently a hybrid between *crispum* and *maculosum*. Flowers much paler than in the last-named, white, tinged with lilac, and spotted with rose. From the hills near Bombay. June, July; three weeks.

Gard. Mag. of Bot. 2, 121; Pescatorea, pl. 36 (both as *maculosum*, var. *Schröderi*).

22. *A. suavisissimum* [a]. Racemes half-pendulous, oblong, wavy, and many-flowered. Similar in general appearance to *odoratum*, but the fragrance still more balsamic and alluring. Flowers rosy-blush, the point of the spur a warm red, and the lip pale yellow. This glorious plant will grow 8 feet high, and bear nearly a score of its gracefully branched racemes. Straits of Malacca, about 1848. July, September. 31s. 6d.—84s.

Pact. Fl. Gard. 2, 66.

23. *A. virens* [a], Java, 1842. Leaves of a peculiarly bright green. Flowers like those of *odoratum*, to which they are not inferior in size, and deliciously and very peculiarly fragrant. Sepals and petals soft and delicate peach or white, a deep purple blotch at the end of each; lip speckled with crimson, and bearing in the centre a curious sanguine tongue, which is serrated and inflated. A beautiful species, and very desirable, being the earliest-flowering of its genus. April—June. Java, 1843. 42s., 63s.

Bot. Reg. 1844, pl. 41; Pact. Mag. of Bot. 14, 197.

24. *A. virens* Dayanum [a]. Java. A variety with longer racemes. 42s., 63s.

ANGRÆCUM.

This very remarkable epiphytic genus belongs almost exclusively to Madagascar, the islands of Bourbon and Mauritius, and the south-eastern portions of the continent of Africa. The greater portion of the species are small-flowered, and scarcely worth cultivating; the others are plants of extraordinary beauty, their bloom coming in winter, and lasting a long time.

25. *A. eburneum* [a a]. A rare and truly noble plant; the leaves ligulate and leathery; the stem simple, erect, about 18 inches high, and throwing off, from near the base, an erect, unilateral, and many-flowered raceme of blossoms measuring 3—4 inches across. Sepals and petals pale-green, linear-lanceolate, and widely-spreading; the lip large, cordate, concave, singularly pointed, fashioned like some beautiful sea-shell, and carved, as it were, out of ivory. Besides this, there is a long green spur. Madagascar, 1826. November—January; four to five weeks. Scentless. 147s.

Bot. Mag. 80, 4761; Bateman, Second Cent. pl. 111; Bot. Reg. 18, 1522.

26. *A. sesquipedale* [a a]. Madagascar; almost concealing, with its profusion, the trunks of the trees upon which it grows. First flowered in England in 1857. A magnificent plant indeed; the stems 3—4 feet high, the leaves 10—12 inches long, the peduncles axillary, and bearing two or three gigantic and ivory-like flowers, fully 6 inches in diameter, and each with two green tails a foot and a half in length! November—January; four weeks. Scented like

the Madonna-lily. As many as ten or twelve flowers are sometimes all open at once. 42s., 63s., 105s.

Bot. Mag. 85, 5113; Bateman, Second Cent. pl. 151; Warner, pl. 31.

This plant should be kept in an atmosphere at once hot, moist, and shaded.

ANGULOA.

A genus of very singular ground-orchids, denizens chiefly of the forests of Columbia, where they grow in damp and out-of-the-way hollows. None of the race are more remarkable for bold and massive appearance—a feature so opposed to the tender comeliness of orchids in general; nor are there any in which the flowers differ so much in form from the usual type, the concavity of the curved sepals and petals rendering them sub-globular. These great flowers stand alone upon short, erect, and leafy stems that spring from below the large pseudo-bulbs, while the leaves themselves are long, broad, plaited, and deciduous. In cultivation, the Anguloas require large pots and moderate heat, excess soon destroying them. They do admirably beneath vines, and should rest until they commence preparations for blooming, which is freely, in the early months of summer.

27. A. Clowesii [c]. Flowers tulip-like, uniform bright golden-yellow, excepting the pure white lip, fragrant and very showy. A well-grown plant will produce as many as sixty or seventy. Elevation, in native country, 5000 to 6000 feet. First bloomed in England in 1844. March—July. 31s. 6d., 42s.

Warner, pl. 33; Bot. Mag. 73, 4313; Bot. Reg. 1844, pl. 63.

28. A. Ruckeri [c]. New Granada, 1845. Flowers tulip-like, as in the preceding, the exterior varying from greenish to bright orange; the interior from brown pure and simple, to brown quaintly speckled with tawny-yellow; lip deep crimson. 42s. to 84s.

Warner, Second Series, pl. 10; Bot. Mag. 89, 5384; Bateman, Second Cent. pl. 144; Bot. Reg. 1846, pl. 41; Moore, pl. 60.

29. A. uniflora [c]. Columbia, 1844. Flowers white or blush-coloured, or tinged with yellow, and spotted with pink; fragrant, and with the aspect of a *Lycaste*. 15s.

Bot. Mag. 80, 4807; Bateman, Second Cent. pl. 159; Bot. Reg. 1844, pl. 60.

ANÆCTOCHILUS.

A little genus of Asiatic ground-orchids, esteemed, not for their flowers, which are pale and insignificant, but for the inexpressible beauty of their embroidered leaves. In this respect they are unexcelled, perhaps, by any plants in the world. The general habit of the plant is procumbent, more or less; the leaves themselves are ovate, 2—5 inches long, ingeniously cut out, one might easily fancy,

from the softest and most delicate velvet ; in hue varying from olive or a peculiar warm and mellow brown, to the richest emerald, and having a lustre almost metallic. But this is only the general surface. Every portion is laced in the most exquisitely beautiful and truly oriental manner, with veins of vegetable gold, the principal threads curving from the base of the leaf to the apex, while cross-fibres springing at various angles, produce the general effect of inlaid lattice-work. Arachne herself might have wrought it, and been proud of it.

“ Illic et lentum filis immittitur aurum ! ”

Sometimes there is, in addition, a broad brown-spotted band of corresponding lustre up the centre, reminding us of the golden rivulet in the petals of the *Lilium auratum*. Java, India, and Ceylon are the native countries of these wonderful plants, which, under cultivation, of course, require the stove, where their colours leave nothing to be desired, and where, when permitted, they blossom freely, producing their little flowers in erect spikes, upon stems a foot in height, much after the same manner as the *Goodyeras*, to which they are nearly related.

Growing naturally in damp places among stones, where the scattered trees afford protection, without deep shadow, it is not difficult to perceive how they should be treated under cultivation, remembering, in the first place, that the roots are fibrous, and that the rhizomes are filiform and subterranean. To *depend* upon keeping them, they should be grown in small pots, in a mixture of sphagnum, peat, coco-nut refuse, and silver-sand, all well broken and mixed, the pots themselves being plunged in a large pan of coco-nut refuse, with a layer of crocks at the bottom. The pots should be raised considerably above the level of the pan, so that the stem and leaves may get plenty of light and air ; they must likewise be covered with a large bell-glass, at all times tilted one or two inches, so as to admit of regular ventilation, and which must be wiped when damp inside. The plants must be watered very carefully, especially when at rest, though liberally while growing : the resting period to be allowed being about two months. If rest be not given, they will probably, sooner or later, all be lost. Great care must likewise be taken to keep them clear of green-fly, which must be done by smoking the plant immediately on its appearance. Treated in this way, all the species of *Anæctochilus* may be grown in a stove, with moderate top-heat only ; and if proper attention be paid to the conditions of air, water, and light, they will be tolerably sure to do well. *Air*, we may be sure, is always salutary to them, if we only remember that Ceylon (where Sir Emerson Tennent describes the *A. setaceus* as growing upon banks only a few miles from the sea) is the Cornwall of the Indian Peninsula, exposed constantly to such breeze as there may be from the water, and that the other species are natives of islands where the atmosphere must be similarly stirred and daily renewed.

BRASAVOLA.

Remarkable evergreen orchids of tropical America; the stems slender and fleshy; the leaves solitary and succulent; the flowers large, and with narrow and acuminate petals. In cultivation, these plants require plenty of sun and air. Until well established, they should be grown upon blocks; subsequently in baskets.

41. *B. Digbyana* [b]. Honduras, 1844. One of the most startling of all known orchids, the solitary flower, which is 6—7 inches across from tip to tip, pale purplish green as to the sepals and petals, and provided with an enormous cordate and cucullate lip of snowy whiteness, the margin losing itself in a broad and irregular fringe, which renders it almost shaggy. Deliciously fragrant. Winter; two to three weeks. 21s. to 42s.

Bot. Mag. 75, 4474; Bot. Reg. 1846, pl. 53.

42. *B. glauca* [b]. Mexico, 1837. Lip creamy-white, the upper portion impressed with pink. Jan.—March. 15s. to 21s.

Bateman, Mex. and Guat. pl. 16; Bot. Reg. 1840, pl. 44; Bot. Mag. 69, 4033.

BRASSIA.

A considerable genus of tropical American evergreen orchids, very nearly related to *Oncidium*, but readily distinguished, in most cases, by the long and caudate sepals. When this character fails (as in *O. phymatochilum*, and one or two others), Brassias are known by their short and earless column, and the presence upon the lip of a pair of vertical plates. All the species possess pseudo-bulbs, and bear simple racemes of flowers that are more or less yellow or greenish, remarkable for their spider-like appearance, and not less curious than elegant.

43. *B. maculata* [a]. An old acquaintance from Jamaica in 1806. Spikes erect, 18 inches long, the sepals and petals 2 inches in length, narrow and acuminate, greenish-yellow flecked with brown; the lip large, white, flat, expanded, and speckled. May, June; four weeks. 10s. 6d.

Bot. Mag. 41, 1691 (A.D. 1814); Paxt. Mag. of Bot. vol. 6, pl. 5.

44. *B. verrucosa* [a]. Guatemala, 1838. Racemes 18 inches long; flowers pale green, the lip white, with green spots resembling warts. May, June; four weeks. 10s. 6d. to 21s.

Bateman, Mex. and Guat. pl. 22.

45. *B. verrucosa major* [a]. 10s. 6d. to 21s.

46. *B. Wrayæ* [a]. Guatemala, 1840. Racemes 2—3 feet long, the sepals and petals yellowish-green, blotched with brown. May—August; keeping in bloom for nearly two months. 10s. 6d. to 21s. (Inseparable from *guttata*.)

Bot. Mag. 69, 4003 (sepals and petals incorrectly *revolute*.)

BROUGHTONIA.

47. *B. sanguinea* [a], the only species of its genus, is a charming pseudo-bulbous epiphyte, wild in Jamaica, not far from the shore, where it seats itself upon old trunks of mangrove and silk-cotton tree. Introduced as far back as 1793. The rich magenta flowers, rarely rivalled in colour, are produced in an erect, lax, and terminal raceme of 6—9, upon a stem 12 inches high. They open in June, and remain in perfection for three months. This admired plant does well suspended upon a block. 21s.

Bot. Mag. 58, 3076, and 63, 3536 (as *B. coccinea*).

BURLINGTONIA.

A very choice epiphytic and evergreen genus, inhabiting the tropical parts of Brazil, compact in habit, and with large and often fragrant flowers, which are usually produced in pendulous racemes from the sides of the pseudo-bulbs.

47.* *B. candida* [a]. Demerara, 1840. Pseudo-bulbs 1—2 leaved. Blossoms in pendulous racemes of 5 or 6, in form resembling a *Bignonia*, snow-white, absolutely unsullied, except that the lip is lightly touched with yellow; in substance and appearance like white satin trimmed with gold, and exhaling the odour of citron. Flowers freely twice a year, lasting three weeks each time. 42s. to 63s.

Bot. Reg. 23, 1927.

48. *B. decora* [a]. Brazil, 1852. Flowers in an erect raceme of 3—10, the sepals and petals ovate, connivent, white, spotted with intense rose, the very large and conspicuous lip white and 2-lobed. The spotting of the sepals and petals is very remarkable for a Burlingtonia. Winter; three weeks. 31s. 6d.

Bot. Mag. 81, 4834; Bateman, Second Cent. pl. 110.

49. *B. fragrans* [b]. Brazil. Racemes erect. Flowers white, the centre of the lip yellow. In Brazil it grows upon the highest branches of the cedrela trees, and fills the atmosphere with the scent of jonquils. April, May; three weeks. 21s. to 42s.

50. *B. venusta* [b]. 1840. Racemes pendulous. Flowers white, delicately tinged with pink, the lip yellow. Jan.—Dec.; three weeks. 21s. to 42s.

Lindley, Sertum, pl. 2.

CALANTHE.

A genus of about 30 species, all very chaste, mostly evergreen and terrestrial in habitat, the leaves broad and many-ribbed, and the flowers in long racemes. Most of the 30 belong to tropical and sub-tropical Asia; the remainder are American.

51. *C. Masuca* [*a b*]. Nepal, Sikkim, Neilgherries, 1838. Leaves large, oblong-lanceolate, plaited and striated. Scape 18 inches high, generally outstripped by the foliage, and terminating in a copious raceme of handsome rosy-purple blossoms, the base of the lip with 3 long and rugged callosities which are either orange-colour or white. Distinguished from the *C. purpurea* by the raceme being open instead of close, the lip broad instead of narrow, and the spur longer than the pedicel, instead of shorter. June—August; six weeks. 31s. 6d. to 42s.

Bot. Mag. 76, 4541; Bateman, Second Cent. pl. 139; Bot. Reg. 1844, pl. 37; Moore, pl. 72.

C. Veitchii. See under *C. vestita*.

52. *C. veratrifolia* [*b*]. East Indies and the Indian Archipelago, 1819. An admirable and deservedly favourite plant. Leaves from the crown of the fibrous root-stock, ovate-lanceolate, plicate, and petiolate. Scapes several, erect, 2—3 feet high, simple, and terminating each in a crowded and erect raceme of snow-white flowers, which spread nearly at right angles, and give the idea of some beautiful white variety of *Phlox*. The ovary is 2 inches long; the tips of the sepals are bright green; and the labellum bears some yellow papillæ. The N. S. Wales plant is the var. *β. australis*. April—July; eight weeks. 21s. to 31s. 6d.

Bot. Mag. 53, 2615; Bot. Reg. 9, 720 (in miniature).

53. *C. vestita* [*a*]. Burmese Empire. First exhibited in England in 1848. Stems fully 2 feet high, and covered, as are most other parts of the plant, with soft hairs. Racemes often extending to the length of 24 inches, loose, zigzag, arched, and in consequence of their tenuity, very elegantly pendulous. Flowers chiefly white, often with a stain of yellow or bright crimson upon the middle of the lip, which is large and bluntly 4-lobed; the sepals and petals turned back, so as to be nearly parallel. One of the finest of the terrestrial orchids, extremely valuable by reason of its flowering in the depth of winter, or from November till February, producing an almost fabulous amount of bloom, and in being most easily cultivated. In every collection of stove-plants it should constitute a prominent feature. All the varieties succeed well in baskets, and from the nature of the inflorescence, have a singularly attractive appearance.

Bot. Mag. 78, 4671; Warner, pl. 29; Paxt. Fl. Gard. 3, p. 38 (woodcut); Paxt. Mag. of Bot. 16, 129.

The principal varieties are—

54. *C. vestita nivalis*. Pure white. 31s. 6d.

55. *C. vestita Turneri*. Pure white. 31s. 6d. to 42s.

56. *C. vestita luteo-oculata* (or *flavo-oculata*). Java. White with yellow eye. 3s. 6d. to 10s. 6d.

57. *C. vestita rubro-oculata*. White, with red eye. 3s. 6d. to 10s. 6d.

Besides these, there is a most beautiful hybrid between *vestita* proper and the *Limatodes rosea*, to which has been given the name of

58. *C. Veitchii*. Flower-stems tufted, 18 inches to 4 or 5 feet in length, and thickly set with rose-coloured bloom of many shades. 10s. 6d., 21s., 42s.

Bot. Mag. 89, 5375 ; Bateman, Second Cent. pl. 106.

CAMAROTIS.

A small and remarkable genus of climbing orchids, natives of India, the Philippines, and New Guinea, where they attach themselves to the bark of trees by means of their long hard roots. The leaves are rigid and narrow; the flowers delicate, yellowish, rosy, or purple, produced in lateral racemes, and with a thick and fleshy lip, shaped like a slipper.

59. *C. purpurea* [a]. Sylhet, 1837. A plant of light, loose, airy appearance; the flowers an inch across, in pendulous racemes of 6—7 inches in length, pink and pale purple, the lip more deeply coloured. March—May; three weeks. 21s.

Lindley, Sertum, pl. 19 ; Paxt. Mag. of Bot. 7, 25.

A plant of this was once exhibited with more than 100 clusters of flowers upon it !

CATTLEYA.

One of the most splendid and imposing genera of orchideous plants, seated in Central America and Brazil, and equally celebrated for the lustre and for the great dimensions of the flowers, the latter being sometimes as much as 7 or 8 inches across. The ground-colour is white, rose, blush, yellow, or purple, and the labellum, in most cases, of a yet deeper colour, and often most beautifully fringed. When the plants are properly treated, these magnificent flowers are poured forth in profusion. Hence they make superb objects alike for Exhibitors and for home-decoration; and if intrinsic excellence wants new recommendation, we have it in the ease with which they may be grown in a moderate temperature. The smaller species do best upon blocks or in baskets. Great care is required in watering them, and in draining, as they suffer seriously from excess of moisture; they also require a good deal of rest.

The genus, as it stands at present, is much in need of revision; and many of the reputed species will certainly prove to be no more than varieties, or perhaps hybrids, produced in their native habitats by cross-fertilization. In the *labiata* section, it is rare to find two of the so-called species differing materially, except in point of colours,—charac-

ters, as every one knows, of true value only in the Cryptogamia. Many of the species indicate an extremely near relationship of this genus to *Lælia*, and pass, almost indifferently, under either name.

60. *C. Aclandiæ* [a]. Brazil, 1839. Pseudo-bulbs long and terete, terminating in a pair of thick and fleshy leaves, from between which arises a peduncle sustaining two large and very handsome flowers. Sepals and petals yellow-green, the face deeply scarred with dark purple; the lip pale purple, with deeper veins, and a yellow streak upon the disk. May—July; three weeks. 21s. to 42s.

Bot. Mag. 84, 5039; Paxt. Mag. of Bot. 9, 1; Flore des Serres, vii. pl. 674; Bot. Reg. 1840, pl. 48; L'Ill. Hortic. 15, 565.

61. *C. amethystoglossa* [b]. Stems tall and slender, the stature usually 2 to 3 feet; the leaves 6 to 8 inches long, and in pairs at the summit; the flowers in superb candelabrum-like heads, individually 4 inches across, blush-coloured or white, suffused with rosy-purple, and adorned with mulberry blotches, some of which are confluent. Lip short, the lobes deep rosy-violet; and the whole of the flower fleshy in substance. March—May. Five weeks. 31s. 6d. to 63s.

Warner, pl. 2; Bot. Mag. 94, 5683; L'Ill. Hortic. 14, 538.

62. *C. bicolor* [b]. Brazil, 1837. Stems long and slender. Flowers $4\frac{1}{2}$ inches across, of a peculiar and lurid tawny-green colour; the lip undivided, purple or magenta, with yellow or white fringe. Column large, pink, and quite exposed. September, October. Six weeks. 31s. 6d., 42s.

Bot. Mag. 82, 4909; Lindley, Sertum, pl. 5, fig. 1.

63. *C. bulbosa* [b]. Brazil, 1846. A beautiful dwarf species, with club-shaped and furrowed stems, each of which supports a blunt, concave, and leathery leaf, and one or two fragrant flowers, fully 5 inches across, bright, though not deep rose-colour, and with a lip of the same hue. Being only 4 inches high, it does best upon a block. The blossoms are made upon the young growth twice a year. February—June. Five weeks. 21s. Also known as *C. Walkeriana*.

Paxt. Mag. of Bot. 15, 49; Paxt. Fl. Gard. 1, 3; Bot. Reg. 1847, pl. 42.

***C. candida*.** See *C. Loddigesii*.

64. *C. citrina* [c]. Mexico, 1838. Flowers large, solitary upon short peduncles, half-pendulous, and exceedingly remarkable among Cattleyas in being of a uniform bright yellow. When the blossom is so viewed as for the labellum to be out of sight, the form, the size, and the colour are exactly those of the wild English tulip. May—August. Two to three weeks. 10s. 6d., 21s.

Bot. Mag. 66, 3742; Pescatorea, 1, 9. F.

C. coccinea. A disused name for the *Sophronitis grandiflora*

65. C. crispa [b]. Rio Janeiro, 1826. Pseudo-bulbs clustered, sub-cylindrical, each bearing a solitary, oblong-lanceolate leaf, from the axil of which proceeds a large and foliaceous bract or spathe, unfolding, in turn, a raceme of 4—6 marvellous flowers, 4—5 inches across, white or cream-colour, with a tinge of purple, the sepals entire, and the petals wavy and curled at the edges; while in front projects the unique labellum, the interior crimson-violet, the extremity undivided, and the margin so crisped as to call to mind the edge of the sea. For Exhibition purposes, and for cutting for bouquets, this most splendid epiphyte, capable as it is of producing 60 flowers at a time, can never possibly be surpassed. July, August. Three weeks. 10s. 6d., 21s. Known also as *Lalia crispa*.

Bot. Mag. 68, 3910; Bot. Reg. 14, 1172; Paxt. Mag. of Bot. 5, 5.

66. C. crispa superba [b]. 21s., 31s. 6d.

67. C. Dowiana [b]. Costa Rica, 1864. One of the most distinct and beautiful of the genus. Pseudo-bulbs 8 to 12 inches long, each bearing a solitary leaf of about their own length. Flowers five or six together, 5—7 inches across when fully expanded; the colour a peculiar and delicate nankeen; the lip unusually large, exquisitely curled and crisped, resembling dark purple-crimson velvet, and provided with radiating golden threads, that diverge like the veins in a leaflet of maidenhair. 42s.—105s. In the best varieties the veins do not reach the edge, leaving a deep purple border.

Bot. Mag. 93, 5618; Bateman, Second Cent. pl. 191; L'Ill. Hort. 14, 525.

68. C. El-Dorado [b]. Rio Negro, Brazil. Flowers large, delicate white and rose, the lip deep-golden, margined with white, and the extremity violet. Probably referable to *labiata*. 105s.

Flore des Serres, 18, 1826.

C. elegans. See *Lalia elegans*.

69. C. Exoniensis [b]. A remarkably fine cross between *Cattleya Mossiæ* and *Lalia purpurata*, the beauties of each of which are inherited. Sepals and petals delicate lilac; lip bold, showy, deep purplish crimson in the front, the interior stained bright orange.

70. C. guttata [b]. Brazil, 1827. Stems 18—20 inches high; flowers nine or ten in a cluster, greenish-yellow, spotted crimson; the lip white, with a shade of purple. Blossoms freely. October, November. Two to three weeks. 31s. 6d.—42s.

Bot. Reg. 17, 1406.

The *C. granulosa* often passes under the above name, but is quite a different thing, and by no means so showy.

71. C. Harrisoniæ [b]. Brazil, 1825. Stem 20 inches high; flowers rose-coloured, with yellow lip. July—October. Three weeks. 15s., 21s., 42s.

Paxt. Mag. of Bot. 4, 247.

72. *C. Harrisoniæ violacea* [δ]. Brazil. A variety of the preceding; taller, and the flowers with a tint of violet. July—October. Three weeks. 21s., 31s. 6d.

73. *C. intermedia* [δ]. Brazil, 1824. Stems 1 foot high. Flowers lilac or rose-colour, the lip rich purple. July—October. 21s.

Pact. Mag. of Bot. 1, 151.

The name *intermedia* is also applied to a white variety of *C. Loddigesii*; and that of *intermedia angustifolia* has been given to the *Lalia Perrini*.

74. *C. intermedia amethystina* [δ]. 10s. 6d., 21s.

75. *C. labiata* [δ]. Brazil, 1818. This, and the *Cattleya crispa*, rank with the most splendid of all orchideous plants. The stems are usually few, and the one or two leaves from each, oblong and rigid; the spathe is large and foliaceous; the peduncle one to six-flowered. Sepals linear-lanceolate; petals broader, undulated, and spreading in a beautiful flag-like manner; lip undivided, cucullate, and expanded above. The colours of this portion of the flower are in variety almost endless, running through many shades of purple, crimson, and violet, but always gorgeous, and the substance and texture being singularly clear and translucent, the plant when in full bloom seems actually luminous. Flowers from July to November, freely, and lasting four weeks. 63s.

Lindley, Coll. Bot. pl. 33; Bot. Mag. 69, 3998; Bot. Reg. 22, 1859; Hooker, Ex. Fl. 2, 157; Pact. Mag. of Bot. 4, 121; Pact. Fl. Gard. 1, 24. F.

76. *C. labiata pallida* [δ]. Brazil. Sepals and petals light pink; lip crimson. 31s. 6d.

77. *C. Leopoldi* [δ]. Brazil. One of the handsomest orchids in cultivation; the sepals and petals brownish-green and yellow-spotted, and the lip saturated in every part with crimson purple. Stems 18 inches high, bearing clusters of six to thirty blooms. Appears to be a variety of the *granulosa*. 15s., 21s., 31s. 6d.

Bot. Reg. 1842, pl. 1; Pescatorea, 43. F.

78. *C. lobata* [δ]. Brazil, 1847. Flowers of a uniform deep rich rose-colour. May, June. Three weeks. Also called *Lalia lobata*. 42s.

79. *C. Loddigesii* [δ]. Brazil—growing upon trees in marshy places. 1824. Stem a foot high, scarcely pseudo-bulbous, the joints linear-oblong, and ending in a pair of leaves, from between which arises the bracteated peduncle of about four remote and handsome flowers. Lip large, pale rose-colour, deeply three-lobed, the two upper lobes white, and smaller than the middle one. The other portions of the flower pale purple, sprinkled with dots of deeper tinge. August—September, producing thirty or forty flowers at the

period of its maximum beauty. Three weeks. A nearly white variety is sometimes met with under the name of *candida* or *intermedia*. 10s. 6d. to 21s.

Lindley, Coll. Bot. pl. 37; Hooker, Ex. Fl. 3, 186; Bot. Mag. 55, 2851 (as *intermedia*).

80. C. marginata [b]. Brazil, 1843. A plant of humble growth, well suited for a block or basket. Flowers crimson, the undivided lip with a white margin; very beautiful. September, October. Three weeks. 31s. 6d.

Pact. Mag. of Bot. 10, 265.

81. C. maxima [b]. Guayaquil and Columbia, 1844. A very distinct and commanding species, remarkable for its long and channelled pseudo-bulbs. The flowers come in winter, in clusters of four to six. When they open they are pale-rose colour, the hue deepening day by day (as happens with the *Hibiscus mutabilis*); the petals are convex and wavy, quite different from the flat and thin ones of *labiata* and *Mossiaë*; the lip is fringy, almost white, and beautifully marked with crimson net-work, the principal lines flowing from an expanse of yellow at the base. 42s. to 63s.

Bot. Mag. 84, 4902; Bot. Reg. 1846, pl. 1; Bateman, Second Cent. pl. 131.

82. C. Mossiaë [b]. La Guayra and Venezuela, 1836. Of this wonderful plant, which is itself probably only one of the sports of the everchanging *labiata*, there are scarcely two alike in colour of flower; the rich purple and rose veining of the orange-stained lip differing in almost every individual, both in intensity and in the area occupied. It is this last-named feature which essentially characterizes *Mossiaë*, the lip of *labiata* being comparatively plain. Well-grown specimens produce fifteen to thirty flowers at a time, some of them 7 or 8 inches across, with flaunting petals, that in some are 3 inches broad! The odour resembles that of the English *Gymnadenia conopsea*, but is more powerful. 7s. 6d., 10s. 6d., 21s., 84s., 105s.

Bot. Mag. 65, 3669; Bot. Reg. 1840, pl. 58 (as *labiata* β. *Mossiaë*).

83. C. Mossiaë aurantiaca [b]. Venezuela. A beautiful variety, with the centre of the lip deep orange-colour. 42s., 63s.

84. C. Mossiaë superba [b]. La Guayra. 21s. to 42s.

85. C. Mossiaë? Wagneri [b]. Pure white; beautiful and very scarce. 63s.

The *Gardeners' Chronicle*, of June 11th, 1864, in speaking of Mr. Warner's Orchids, and describing the more remarkable varieties and forms of *Cattleya Mossiaë*, says with perfect truth, "that no one who has not seen a large display of these charming *Cattleyas* in blossom at the same place and at the same moment, can have any idea of the endless variety which occurs among them. One of the specimens,"

the writer continues, "was a mass of 2 feet across, and bore 30 of its noble flowers. Scarcely two plants are alike, and some are most remarkably distinct from each other, so that in future it will not be enough for the lover of orchids to place *Cattleya Mossiæ* in his collection; he must make up his mind how many forms he will admit, and then set about seeking out those which best suit his fancy."

86. *C. pumila* [b]. Brazil. Only about 6 inches high. Flowers rose-coloured, the lip crimson and crisped, the margin often white. Sept.

Bot. Mag. 65, 3656; Bot. Reg. 1844, pl. 8.

***C. pumila major*.** See *Lalia præstans*.

87. *C. quadricolor* [b] New Granada. A strikingly beautiful plant, the pseudo-bulbs long, narrow, and erect; the flowers closely imbricated; the sepals and petals both of the purest white; the lip somewhat curled, deep purple, with a band of white, some streaks of yellow, and flush of rosy lilac. May, June.

Bot. Mag. 91, 5504; Bateman, Second Cent. pl. 108. L'Ill. Hortic. 14, 514.

88. *C. quadricolor Hadweni* [b]. New Granada.

89. *C. Skinneri* [b]. Guatemala, 1836. Flowers deep rich rose, with crimson lip, 4 inches across, very fine and effective. The column in this species is shorter and smaller than in any other *Cattleya*, furnishing a good character. April, May. Three weeks. 10s. 6d., 15s., 21s.

Bot. Mag. 72, 4270; Bateman, Mex. and Guat. pl. 13; Paxt. Mag. of Bot. 11, 193.

90. *C. speciosissima* [b]. One of the *labiata* group. 21s., 42s.

91. *C. superba* [a]. British Guiana, 1838. Stems 9—12 inches high, and two-leaved. Flowers in a terminal and erect raceme of 5—6, individually 4—5 inches across, rose and crimson; the splendid and deep-hued lip with three lobes; the margin of the white and yellow base laced with magenta. Fragrant. August, September; three weeks. 42s., 63s.

Warner, pl. 24; Lindley, Sertum, pl. 22; Bot. Mag. 70, 4083; Paxt. Mag. of Bot. 9, 265; Flore des Serres, 9, 926.

92. *C. Trianæ* [b]. Of this beautiful winter-blooming *Cattleya* there are many varieties, all very delicate. Appears to be a form of *Warszewiczii*. 10s. 6d., 15s., 42s.

***C. Walkeriana*.** The same as *C. bulbosa*.

93. *C. Warneri* [b]. Brazil. Habit of *C. labiata*. Leaf solitary and flat, with a peculiar and characteristic twist at the point. Scapes 16 inches high, three to five-flowered, the blossoms individually 6 inches across, mauve, clouded with rose-colour, and delicately

fringed ; the lip 3 inches long, orange-yellow at the base, the disk rosy crimson with pale margin. June—August ; well-grown individuals having fifteen to twenty flowers open at once. The Fairfield plants were imported as *labiata*, and among them have already appeared several striking novelties. 15s. to 105s.

Warner, pl. 8.

94. *C. Warneri superba* [b]. 63s. to 105s.

95. *C. Warscewiczii* [b]. Habit of *C. labiata*. Stems clavate, about a foot in height, terminating each in a solitary, oblong, and leathery leaf. Peduncle two to three-flowered, the blossoms remarkable for their finely-rounded outline. Sepals lanceolate and nearly white. Petals very broad, somewhat frilled, and also nearly white. Lip large, delicate rosy-lilac, the disk with an orange-coloured blotch. Jan., Feb.; three to four weeks. 15s. to 42s.

96. *C. Warscewiczii delicata* [b]. A convenient collective name for many very beautiful pale blush and white varieties of the preceding, exceedingly useful for light bouquets, and for employment as bridal orchids. The flowers often 6 inches across ; the lip deep rich rose-colour. 15s. to 42s.

Warner, pl. 4.

CHYSIS.

Beautiful epiphytic orchids from equatorial America ; the stems fleshy, and covered with sheaths ; the leaves thin and deciduous ; the flowers large, handsome, very bright white or yellow, of the consistence of wax, and produced in lateral spikes or racemes, in company with the renewed foliage.

97. *C. aurea* [b]. New Granada, 1834. A plant of great merit, and very singular in its mode of growth, the old stems being invariably pendulous, while the extremities of the young and leafy shoots curve upwards, after the manner of the ultimate branchlets of aged ash-trees. Fully developed stems reach the length of 2 feet, some of their subdivisions ending in tufts of foliage, while others are leafless. Racemes five to six-flowered, the blossoms white, more or less deeply flushed, mottled or lined with yellow, the lip brokenly veined or sprinkled with red, and the veins hairy. Flowers at all seasons, but emphatically in May and June ; two to three weeks. 31s. 6d., 42s.

Bot. Mag. 64, 3617 ; Bot. Reg. 23, 1937.

98. *C. bractescens* [b]. Mexico, 1839. Differs from *Ch. aurea* (to which it is much superior) in the possession of a large and inflated bract to every flower ; also in having the five to seven ridges at the base of the lip downy for only half their length. Sepals and petals pure white, the lip yellow, the total width of the flower $2\frac{1}{2}$ inches.

Racemes about 6 inches in length, opening new blooms for two or three weeks. April, May. 31s. 6d. to 63s.

Bot. Mag. 86, 5186; Bateman, Second Cent. pl. 138; Bot. Reg. 1841, pl. 23.

99. *C. lævis* [b]. Oaxaca, 1840. Bracts like those of the preceding, but the lip has a shorter middle lobe, and short and glabrous ridges. Pseudo-bulbs 12—18 inches long. Racemes eight to ten-flowered, the blossoms $2\frac{1}{2}$ inches across, cream-colour, shaded orange, and the lip spotted. The best of its genus. Jan.—Dec., lasting two to three weeks.

Warner, Second Series, pl. 14; Bateman, Mex. and Guat. pl. 31.

100. *C. Limminghii* [b]. Mexico, 1855. Appears to be a variety of *aurea*, with a blotch of lilac or purple upon each of the perianth-lobes, and the centre of the lip with bold longitudinal stripes of crimson-purple. Flowers 2 inches across. May, June; four weeks. 42s. to 63s.

Bot. Mag. 87, 5265; Warner, pl. 34.

CÆLOGYNE.

The species of this very elegant epiphytic genus belong to the tropical and sub-tropical parts of Asia. The flowers are remarkable for their great size, their membranous texture, and handsome cucullate lip, the latter embellished with streaks or crested lamellæ of some beautiful tint. Those members of the genus which belong to the alpine parts of India differ so considerably in habit from the remainder, as to be conveniently distinguished under the name of *Plèione*.

101. *C. cristata* [a b]. Nepal and Sylhet, at an altitude of 5000 to 8000 feet. Introduced 1837. Pseudo-bulbs very numerous, 2 inches in length, wrinkled and 2-leaved. Racemes 9 inches long, half-pendulous, and elegantly *dégagée*, each consisting of 4—8 pure white and lightly crumpled blossoms, 3—4 inches across; the centre of the lip with 5 parallel veins, which are decked with yellow fringes. Feb., March, flowering profusely. 10s. 6d. to 105s.

Warner, pl. 35; Bot. Reg. 1841, pl. 57; Flore des Serres, 17, 1807; Moore, pl. 10.

102. *C. Gardneriana* [a b]. Nepal, Khasya, 1837. Flowers white, tinged with yellow, the pendulous racemes looking like snow-wreaths. Dec., Jan.; four weeks. 31s. 6d., 42s.

Paxt. Mag. of Bot. 6, 73.

C. humilis. See *Plèione humilis*.

C. Lagenaria. See *Plèione Lagenaria*.

103. C. Lowi [*a b*]. Borneo, 1845. Flowers in drooping racemes a foot in length, individually pale yellow and chocolate. June, July; two to three weeks. 31s. 6d.

Pact. Mag. of Bot. 16, 227.

C. maculata. See *Plöione maculata*.

104. C. pandurata [*a b*]. Borneo. Racemes pendulous, 12—20 inches long, the flowers 4 inches across, light green, and with a violin-shaped and very singularly marked lip, this part being ornamented with *truly black* blotches and veins. A very distinct and interesting orchid, quite unlike any other Cœlogyne, and its colours extremely rare. May. 31s. 6d. to 42s.

Bot. Mag. 84, 5084; Bateman, Second Cent. pl. 160.

CYMBIDIUM.

A large genus of tropical and sub-tropical old-world orchids, growing in the ground, throwing up tufts of sword-shaped evergreen leaves, and radical spikes of flowers, which in different species are either pendulous or erect, few-flowered or many-flowered, and inconspicuous or strikingly beautiful. However unlike in respect of the inflorescence, all have linear-oblong sepals and petals, and possess for their essential character, a pair of curved ridges upon the lower part of the lip.

105. C. eburneum [*a*]. China and Eastern Bengal. Flowers in short racemes, large, very beautiful, exhaling the odour of the garden lilac, 5—6 inches across, ivory-white, the lip with a velvety golden ridge running down the centre. Feb., March; six weeks. 147s.

Warner, pl. 27; Bot. Mag. 85, 5126; Bateman, Second Cent. pl. 177; Bot. Reg. 1847, pl. 67; Pact. Mag. of Bot. xv. 145.

106. C. Mastersi [*a*]. East Indies, 1841. Flowers hanging loosely, 5—6—10 together, from the upper part of an erect stalk, which is clothed with green and imbricated sheaths; individually large, snow-white, except a little pink shading in the lip, and scented like almonds. An excellent winter-flowering plant. Six weeks. 42s.

Pact. Fl. Gard. 3, 78; Bot. Reg. 1845, pl. 50.

Though capable of leading an epiphytic life, the Cymbids should always be grown in pots, filled with thoroughly drained lumps of peat, into which their long roots can penetrate. In summer they should be well sunned and well watered; while making their growth they should be kept in an atmosphere saturated with moisture, and when going out of bloom should be gradually dried off.

CYPRIPEDIUM.

An extraordinary and very numerous genus, in structure more unlike all other orchids than any two of those others are different between themselves. The species occur both in the old world and the new, extending from the chilly woods of Canada and Siberia to the warm glades of Nepal and Mexico, and even to the torrid regions of India and Central America. The majority belong to temperate countries, and these often possess leafy stems, whereas in the Indian kinds the leaves are all radical, and the flowers grow singly, or two together, upon scapes 6—9—15 inches high. The flowers are in almost every instance showy, 3—4 inches across, half-pendulous from the summit of the scape, with widely extended wings that are often twisted like the petals of a *Gloriosa*, and an enormous pouch in front;—in colour they are usually more or less yellow, or greenish, and richly lined and variegated with pink and white.

Reichenbach separates some of the tropical American species under the generic name of *Selenipedium*, on account of their three-celled ovary, but for practical purposes it is best to keep them in their old place.

The flowers are always of very long duration, lasting for weeks, even after being cut, and hence are extremely valuable for decorative purposes. Under cultivation the plants require but little rest, and must not be let to get too dry.

107. *C. barbatum* [a b]. Malacca, &c., 1838. Flowers purple, green, and white, much imbued with the former colour, and finely striped. Distinguished at once from its near neighbours by the purple, hairy, and shining warts which border the upper margin of the petals. Leaves mottled. Jan. to Dec., but especially in May. Six weeks. 2s. 6d. to 10s. 6d.

Bot. Mag. 72, 4234; Bot. Reg. 1842, pl. 17? Moore, pl. 100.

108. *C. barbatum* Dayi [a]. Borneo. A very rare and beautiful variety, with large brightly-coloured flowers, and handsomely mottled foliage. 105s. F.

109. *C. barbatum giganteum* [a]. Malacca. 31s. 6d.

110. *C. barbatum majus* [a]. Malacca, 1838. 3s. 6d. to 10s. 6d.

111. *C. barbatum nigrum* [a]. Malacca. A good and distinct variety, conspicuous in the dark hue of the lip. 15s. to 21s.

112. *C. barbatum purpuratum* [a]. Sylhet, 1838. The banner at the back of the flower striped purple and white. 7s. 6d.

Bot. Mag. 82, 4901 (as *C. purpuratum*).

113. *C. barbatum Veitchii* [a]. Java. The finest of the light-coloured varieties, remarkable for its stripes of green and spots of purple, and for the beautiful purple-shaded pouch. The leaves also are finely tessellated. July, August. (This plant is also called *C. superbians* and *C. grandiflorum*). 42s. to 63s.

Warner, Second Series, pl. 12. L'ill. Hort. 12, 429.

114. *C. Bulleni* [a]. Borneo. Resembles *C. Hookera*, but the leaves are spotted even more brightly. 21s. to 31s. 6d.

115. *C. caudatum* [a]. Panama and Peru, upon the mountains, 1848. The most extraordinary of the Cyripedes. Flowers two or three together upon the peduncle, yellow, shaded and chequered with rose and bright brown, excepting the pouch, which is pink-maroon, and curiously spotted. The petals, when the flower expands, are only about an inch in length, but in the course of four days, during which we may watch them grow, they extend to 18 inches, hanging down like tails, and trailing upon the ground, unless the plant be placed on a bracket. A well-grown individual will produce ten or twelve of these most singular flowers. M. Linden recently exhibited one with twenty to twenty-four! March.—May; four weeks. 21s. to 84s.

Warner, Second Series, pl. 1; Paxt. Fl. Gard. 1, 9. Flore des Serres, 6, 566.

115*. *C. caudatum roseum* [a]. 63s. to 84s.

116. *C. concolor* [a]. Moulmein, growing upon limestone rocks. This beautiful and compact species is chiefly valuable on account of its leaves, which are mottled green and white upon the upper-surface, while the under-side is a full reddish-purple. The flowers are two inches across, pale primrose-yellow, minutely crimson-dotted, and produced in couples upon a short and hairy scape. Requires good stove temperature, with plenty of moisture, and fares better by the addition to the soil of a few pieces of chalk. 31s. 6d., 42s.

Bot. Mag. 91, 5513; Bateman, Second Cent. pl. 153.

117. *C. Fairrieianum* [a b]. Assam. Very distinct and extremely beautiful. Flowers white, green, and purple, striped and reticulated. September, October; six weeks. 21s. to 31s. 6d.

Bot. Mag. 83, 5024; Bateman, Second Cent. pl. 140.

***C. grandiflorum*.** The same as *C. barbatum Veitchii*.

118. *C. hirsutissimum* [a b]. Java, about 1857. Flowers 4 to 6 inches across, usually two to each peduncle, purple, brown, and green, shaded and spotted. Scapes, bracts, and reverse of the sepals shaggy with long hairs. A very fine representative of the

genus, the foliage resembling that of the *C. insigne*. Feb.—May. Six weeks. 31s. 6d., 42s.

Warner, pl. 15; Bot. Mag. 83, 4990; Bateman, Second Cent. pl. 149.

119. *C. Hookeræ* [a]. Borneo. Remarkable for its rich green and white-spotted leaves. Flowers lilac and green, the lip purple. A plant very easy to cultivate. 10s. 6d., 21s.

Bot. Mag. 89, 5362; Bateman, Second Cent. pl. 123; Flore des Serres, 15, 1565.

120. *C. insigne* [b c]. Nepal, 1821. The finest known species of this rich and glorious genus. Leaves narrow, not distained with extra colours. Flower solitary, nearly 3 inches across, the dorsal piece greenish, edged with white; the wings long, spreading, flat and greenish, with blended purple and yellow. A very valuable winter-flowering orchid, and especially useful for bouquets. Like many other plants from the northern parts of India, the *insigne* does not require a high temperature, and may be kept in the greenhouse or conservatory, and during the summer is all the better, perhaps, for having the pot sunk in the open ground. 2s. 6d. to 21s.

Lindley, Coll. Bot. pl. 32; Hooker, Ex. Fl. 1, 34; Bot. Mag. 62, 3412.

121. *C. insigne Maulei* [b c]. Nepal. Dorsal piece of the flower more extendedly white. 15s.

Flore des Serres, 15, 1564.

122. *C. lævigatum* [a]. Philippines, 1863. Leaves very glossy. Standard purple-striped. Petals 5—6 inches long, much twisted, scarcely more than $\frac{1}{4}$ inch wide, green at the base, the remainder chocolate-purple. Lip small, and of a subdued yellow. June.

Bot. Mag. 91, 5508; Bateman, Second Cent. pl. 101; Flore des Serres, 17, 1760.

123. *C. Lowi* [a]. Borneo and Sarawak, growing upon trees in thick jungles. Flower solitary, or the scapes 2 to 5 flowered, in the wild state 5 to 10 flowered, presenting various bright hues, yellow, purple, and violet, shading of green, and blackish spots. May—August; lasting ten weeks, if preserved in a warm dry house. 31s. 6d. to 63s.

Gardeners' Mag. of Bot. 1, 297.

124. *C. niveum* [a]. Siam. Leaves freckled upon the upper surface with silvery white. Scape sustaining one or two flowers of a soft and satiny or porcelain white, more or less profusely dotted with violet or rosy purple.

Bot. Mag. 97, 5922; Dombrain's Fl. Mag. pl. 543, Aug. 1871.

125. *C. Schlimii* [a b]. New Granada, at 4000 feet altitude. A rather small but distinct and very beautiful *Selenipedium*, the flowers in erect racemes of 6 to 8, two or three of which are open at once, the sepals and petals white, the inner surface mottled with purple

or deep rose ; the large and swollen pouch white at the back, and with a large crimson blotch in front. The flower is more like that of a *Dendrobe* than of a *Cypripede*. 31s. 6d.

Bot. Mag. 92, 5614 ; Bateman, Second Cent. pl. 200.

126. *C. Stonei* [a]. Borneo. Leaves 10 to 12 inches long, two from each root. Flowers two to three together on every scape ; the standard white, externally streaked purple, the petals 4 to 5 inches long, curved, tawny yellow and purple ; the pouch fashioned like a Turkish slipper, white and purplish, with red reticulations. Flowers at various seasons, and is the gayest of the *Cypripedes*. 42s. to 63s.

Bot. Mag. 88, 5349 ; Bateman, Second Cent. pl. 141.

C. superbiens. The same as *C. barbatum Veitchii*.

127. *C. venustum* [b c]. Nepal and Sylhet, 1816. Equally remarkable for its richly marked leaves, upon which mingle many shades of green ; and for the variety of the hues which meet in the flowers. The sepals and petals are white and pink, with beautiful green or crimson parallel lines, and variegated, in part, with purple and dark brown. The petals are further remarkable for their long fringes. Lip or pouch yellow and veined. This admired plant thrives well in common earth, with admixture of a small quantity of peat. Winter. 2s. 6d. to 10s. 6d.

Hooker, Ex. Fl. 1, 35 ; Bot. Mag. 47, 2129 (very poor) ; Bot. Reg. 10, 788 ; Warner, Second Series, pl. 24.

128. *C. villosum* [a]. Moulmein and the Tonghoo Mountains. Flowers 5 inches across, glossy amber-brown. One of the best of its race. April, May ; six weeks. 31s. 6d. to 63s.

CYRTOCHILUM.

A rather numerous American genus, the plants often with the habit of *Oncids*, but, excepting one here and there, not so deserving of cultivation as many others.

C. Bictoniense. See *Odontoglossum Bictoniense*.

129. *C. maculatum* [b c]. Mexico, 1839. Pseudo-bulbs compressed, bearing two plane leaves, and a simple scape with erect raceme of 6 to 8, yellowish-green, primrose-scented, and fleshy flowers, 1½ inch across ; the sepals and petals ovate-lanceolate, and spotted purplish brown. Lip cream-colour, streaked with red. Wild specimens indicate capacity of the raceme to branch, and become 30 to 50 flowered. A splendid species. September ; three weeks. 10s. 6d. to 21s.

Lindley, Sertum, pl. 25 ; Bot. Mag. 68, 3880 ; Bot. Reg. 1838, pl. 44.

130. C. stellatum [*b c*]. Brazil. A magnificent species, the scape often many feet long, the flowers 3 to 4 inches across, making the verdurous plant seem strewn with lemon-coloured stars. A large purple bract to every flower. Lip snow-white, except the yellowish base. Slightly fragrant. ros. 6*d*.

Lindley, Sertum, pl. 7.

DENDROBIUM.

In the whole compass of the epiphytic orchids there is no genus better known, or more lovely, and scarcely one more extensive than the present,—the very name of which is an allurement, signifying “life among the trees.” The species exceed 200 in number, and are in almost every case either showy or sweet to behold, though very few are fragrant. Most of these beautiful plants are natives of India and the Indian Archipelago, the remainder (excepting a solitary example in New Zealand) occurring in Eastern Australia and the islands of the Pacific. Nothing can be more diverse than the habit, the stature, and the inflorescence of the various forms, some scarcely exceeding the mosses amid which they nestle, while others attain dimensions seldom equalled in the entire order. The predominant colours of the flowers are yellow and purple, the latter relieved with white or blush: the texture is often very enduring, and not infrequently muslin-like; in many there is introduced a double patch of deep-toned crimson-violet velvet, while others have the margin delicately fringed. Many of the species are recommended also by their comparative hardiness, allowing them, when in bloom, to be brought into the parlour. Some tastefully arranged ferns and a *Dendrobium nobile* constitute, in early spring, a thoroughly *recherché* domestic ornament. Very many of the species produce their flowers upon *leafless* branches. In cultivation, accordingly, these should again have plumose ferns associated with them, so as to supply the complementary green,—a remark that will apply also to such orchids as the *Calanthe vestita*.

131. D. aduncum [*a b*]. India. First flowered in England in 1842. A very pretty species, allied to *Pierardi* in habit, and in the pale pink flowers, which are $1\frac{1}{2}$ inch across, remarkable for their transparency and the clearness of their tints, and produced in little racemes from the nodes of the stems. 15*s*. to 31*s*. 6*d*.

Bot. Reg. 1846, pl. 15.

132. D. aggregatum [*a b*]. India. First flowered in England in 1837. A pretty little dwarf species. Pseudo-bulbs 2 inches long. Leaf solitary. Flowers orange-coloured, in arching and half-pendulous racemes of 6 to 8 inches in length. May.

Bot. Mag. 65, 3643; Bot. Reg. 20, 1695; Paxt. Mag. of Bot. 6, 145.

133. *D. aggregatum majus* [a b]. India. March—May; two to three weeks. 21s. to 42s.

134. *D. albo-sanguineum* [a b]. Moulmein. In open forests, upon hills. Flowers two to three together, creamy white, with a mixture of pink, barred in the centre with concentric crimson lines, waxy in consistence, and when spread flat, fully 4 inches across. Stems stout, thick, knobby, and erect, one foot high, and the habit compact. One of the very best of the Dendrobies. May—July; two to three weeks. 15s. to 21s.

Bot. Mag. 85, 5130; Bateman, Second Cent. pl. 173; Paxt. Fl. Gard. 2, 57.

135. *D. anosmum* [a b]. Philippines, 1840. Resembles *macranthum*, but is scentless. Flowers smaller than in that species, rose-coloured, the divisions short, broad, and even, instead of undulating. March; three weeks. 42s. to 63s.

Paxt. Mag. of Bot. 15, 98.

***D. aureum*.** The beautiful plant so called by Lindley is identical with the *heterocarpum*.

***D. barbatulum*.** See remarks under *D. Fytcheanum*.

136. *D. Bensoniæ* [a b]. Moulmein. Growing on trees upon exposed ridges. Stems tufted, 1 to 2 feet high, suberect and pendulous, the nodes not tumid. Leaves on separate branches, few and linear. Flowers 2 inches across, snow-white, two to three together from the ends of the stems, the lip with an orange disc, and two purple spots near the base. A distinct, striking, and truly handsome species. June, July; three weeks. 31s. 6d. to 63s.

Bot. Mag. 93, 5679.

***D. bicolor*.** Vide *D. palpebræ*.

137. *D. bigibbum* [a b]. North-east (tropical) coast of New Holland, 1854. Stems long and slender, bearing, at the extremities, five or six leathery leaves. Racemes from near the ends of the older stems, erect, 8 to 9 inches long, and ten to twelve flowered; the blossoms rich purple, with a very peculiar lip of deeper hue, the lip, with the spur, giving the flower a kind of double chin, whence the name. Requires a considerable amount of warmth and moisture, and flourishes in the sunshine. Distinct and rare. September, October; three weeks. 105s. to 147s.

Warner, Second Series, pl. 8 (good, but rather too bright); Bot. Mag. 82, 4898; Bateman, Second Cent. pl. 169 (coloured red).

A plant of *bigibbum*, exhibited by James Brooke & Co., at the meeting of the Royal Horticultural Society, September 21, 1870, received a first-class certificate. This specimen had a raceme of eleven flowers, six of which were fully expanded.

138. *D. cærulescens* [a b]. Khasya, East Indies, 1837. A plant with the habit entirely of *D. nobile*, the flowers delicate blueish lilac, showy, tinged with purple at the tips, and with a purple-stained labellum. (Sometimes called *D. Wallichii*.) 21s.

Lindley, Sertum, pl. 18.

139. *D. Calceolaria* [a b]. Sylhet, Burmah, Ava, and Pegu, 1820. Flower-stems 5 feet high, the side shoots rising still higher, and clothed to the summit with narrow and glossy leaves. Racemes 6—8—10 inches long, pendulous, and six to nine flowered; the blossoms individually 3 to 4 inches across, tawny rose-colour, the sepals and petals reticulated. Lip slipper-shaped, remarkably involute, and resembling the corolla of a *Calceolaria*, the inside feathered with blood-colour. The odour, evolved towards evening, is said to be "musky," but seems more like that of dried woodruff. May—July. 21s.

This species must not be confounded with the *D. Calceolus* of Roxburgh.

Hooker, Ex. Fl. 3, 184; Wallich, 2, 195; Bot. Mag. 67, 3837; Paxt. Mag. of Bot. 2, 241 (as *moschatum*).

140. *D. Cambridgeanum* [a b]. Northern India, 1837. A very beautiful pendulous species, the stems about a foot long, and the flowers produced upon the bright green young growth in spring, this being one of the *deciduous* Dendrobes. Blossoms golden yellow, the lip, which has a dark velvety crimson blotch in the middle, entire and hairy. 10s. 6d. to 42s.

Nearly allied to *Paxtoni* and *chrysanthum*.

Bot. Mag. 75, 4450; Paxt. Mag. of Bot. 6, 265.

141. *D. chrysanthum* [a b]. India, 1828. To imagine a plant more beautiful and graceful would be difficult. The pendulous stems, which droop to a length of 3—4—5 feet, are clothed with leaves of the most lucid green; while the flowers, which are large, broad, and almost circular, seem the perfection of rich and shining yellow. Inside the lip is a double blotch of deep sanguine. Well-grown plants will bear strings of bloom to the extent of seventy or eighty flowers. To see them in perfection a hanging basket must be employed. May—October; two to three weeks. 7s. 6d. to 21s.

Bot. Reg. 15, 1299.

142. *D. chrysotis* [a b]. Assam. A plant of this very effective new species was exhibited by us at the Royal Horticultural Society's Exhibition, Sept. 21, 1870, and received a first-class certificate. It is thus described:—" *D. chrysotis*. The stems are slender, rod-like, 3 to 4 feet long; the leaves oblong-acute, the flowers large, deep yellow, on very slender spikes, 8 to 9 inches long, having ligulate sepals, narrower than *fimbriatum*, and a more rhomboid lip, with two spots on its disc. Assam, J. Brooke & Co."—*Gardeners' Chronicle*, 1870, p. 1311. August; ten days. 21s. to 63s.

Florist and Pomologist, June, 1871.

Though described as a good species by Reichenbach, there is a probability, it must be confessed, that this plant is only one of the many expressions of a large and polymorphous type.

143. *D. chrysotoxum* [a b]. India, thriving equally in dry situations and in moist ones. 1845. Habit erect and compact, the height about 12 inches. Pseudo-bulbs large, club-shaped, and terminating in three or four dark-green leaves. Racemes gracefully drooping, and composed of twelve or more very large and golden-yellow flowers, the lip orange-coloured, except at the margin, which is worked, as ladies say, in such a manner as to suggest the idea of a Saracenic arch, inverted, of course. Differs from *aggregatum* in its club-shaped and many-leaved pseudo-bulbs; and from *densiflorum* in its many-angled pseudo-bulbs, and in the lip being simply fringed and pubescent, instead of bearded. November—March; three weeks. 21s. to 31s. 6d.

Bot. Mag. 84, 5053; Bateman, Second Cent. pl. 124; Bot. Reg. 1847, pl. 36.

144. *D. clavatum* [a b]. India. Stems or pseudo-bulbs 18 to 24 inches long. Flowers from their summits, in close heads of five, but with large and characteristic bracts between; individually bright orange-yellow, with a double rich-brown or crimson stain in the centre, 2 inches across when flattened, the lip undivided, and strongly ciliated, but neither fringed (as in the related *imbriatum*) nor slipper-form (as in related *Calceolaria*). April, May; three weeks. 21s. to 42s.

145. *D. crassinode* [a b]. Burmah, &c., growing upon large trees, at an elevation of 2500 feet, where the moisture is considerable. A beautiful and remarkable species; the stems 9 to 24 inches high, and formed throughout of swollen internodes, so as to present the appearance of strings of large beads. Flowers produced abundantly from the upper nodes, as many as twenty-two together when wild, 2 to 2½ inches across, waxy, pure white, the lip tipped with rich purplish pink, and with a yellow centre. A plant of very easy culture. 63s. to 105s.

Bot. Mag. 95, 5766.

146. *D. crepidatum* [a b]. India and the Indian Archipelago. Introduced about 1849. Stems one foot high, erect and slender, and the habit of the plant like that of *Devonianum*, but the pseudo-bulbs short and strong. Leaves confined to the flowerless branches. Flowers in pairs from the joints of the leafless ones, constituting, in the aggregate, a kind of open thyrses, individually white, edged with pink, the lip with a yellow stain. Texture very firm, resembling that of a *Lycaste*. April—June; three weeks. 42s.

Bot. Mag. 83, 4993; Bateman, Second Cent. pl. 129.

147. *D. cretaceum* [a b]. Mergui, 1847. Flowers cold chalky white, the lip crimson-pencilled. February—May. 15s. to 21s.

Bot. Mag. 78, 4686; Bot. Reg. 1847, pl. 62.

148. *D. crystallinum* [a b]. Burmah. Stems thick and strong; flowers white, tipped with warm purple, the disc of the lip bright orange. Excellent among its congeners in being fragrant. June, July; three weeks. 63s. to 105s.

***D. cucullatum*.** See *D. Pierardi*.

149. *D. Dalhousieanum* [a b]. India, 1837. A magnificent plant, and very strong grower; the pseudo-bulbs rod-like, 4 to 5 feet long, and proportionately thick. While young, they are purple-dotted. Flowers 3 to 4½ inches across, cream-coloured, with light cloud of rose; the downy lip with a pair of broad, blood-coloured blotches, which seem like wings to the yellow and crimson-lined centre. April—July. 21s. to 31s. 6d.

Warner, pl. 22; Bot. Reg. 1846, pl. 10; Paxt. Mag. of Bot. 11, 145.

150. *D. Dayanum* [a b]. Borneo. Very distinct and estimable; the flowers rich rose-colour, and the lip fringed. Imported plants have bloomed upon 4 feet 9 inches of the length of the pseudo-bulbs. March. 21s. to 31s. 6d.

151. *D. densiflorum* [a b]. East Indies, 1829. A first-class ornamental plant, the stems numerous, 2 to 2½ feet long, pendulous, with many oblong leaves, and large, lateral, and massive racemes of yellow flowers, the broad and spreading lip (which is of a much deeper tint than the sepals and petals) clothed with soft golden fur. Exceedingly sumptuous. March—May. 15s. to 21s.

Bot. Mag. 62, 3418; Bot. Reg. 21, 1828; Wallich, 1, 40; Paxt. Mag. of Bot. 5, 121. F.

152. *D. densiflorum album* [a b]. East Indies. Similar to the preceding; but the sepals and petals white. (Also called *D. Schröderi*). 63s. to 105s.

Floral Mag. pl. 502.

153. *D. Devonianum* [a b]. India, on the Khasya hills, 1837. One of the most beautiful of a princely race, and when in perfection hardly rivalled. Stems wiry, 3 to 4 feet long, pendulous, and flowery for half their length, the blossoms individually translucent white, with purple tips, and the lightest possible tinge of rose; the labellum with two bright orange-yellow crescents, the edges of which melt away like those of a rainbow, and its margin delicately fringed. May, June; two to three weeks. 10s. 6d. to 63s.

Warner, Second Series, pl. 11; Bot. Mag. 75, 4429; Paxt. Mag. of Bot. 7, 169.

154. *D. dixanthum* [a b]. A free-growing Dendrobe, again from Moulmein the inexhaustible, the racemes abundant, two to five flowered, from erect stems 18 inches high; the flowers individually 2 inches across, light yellow, with darker lip. 31s. 6d. to 42s.

Bot. Mag. 92, 5564; Bateman, Second Cent. pl. 197. F.

155. *D. eburneum* [a b]. Moulmein. Flowers ivory-white, except in the centre; the sepals and petals acuminate. Sweet-scented. Blooms at irregular periods. 31s. 6d. to 63s.

Bot. Mag. 90, 5459; Bateman, Second Cent. pl. 166.

156. *D. Falconeri* [a b]. Mountains of Bhootan; altitude 4000 feet. 1847. One of the most strikingly beautiful orchids in cultivation. Stems long, slender, branched and pendulous. Leaves few, linear, and inconspicuous. Flowers abundant, large, shining with sweet brightness; the sepals pale rose, tipped purple; the petals white, and also purple-tipped; the lip again white, with a liquid mulberry-coloured and golden-bordered recess. April—June; two to three weeks. 21s. and upwards.

Bot. Mag. 82, 4944; Bateman, Second Cent. pl. 137.

157. *D. Farmeri* [a b]. India, 1847. A most delicate and lovely species, resembling *densiflorum*, "but the stems are more angular (quadrangular), and the flower-scapes are less densely laden with bloom." The flowers, too, are pale straw-colour, instead of full yellow, and agreeably tinged with rose. Very near also to *chrysotoxum*, from which it differs in the lip being smaller and less fringed, and in the roseate of the sepals and petals. April, May; two to three weeks. 21s. to 42s.

Bot. Mag. 78, 4659; Bateman, Second Cent. pl. 132; Flore des Serres, 7, 741; Pescatorea, 1, 4; Paxt. Mag. of Bot. 15, 241.

158. *D. Farmeri aureo-flavum* [a b]. Moulmein, 1847. A very beautiful variety of the preceding, with rich yellow flowers. 42s.

Bot. Mag. 90, 5451.

159. *D. fimbriatum* [a b]. India, chiefly in Nepal and Burmah, 1823. Stems 1—2—3 feet long, zigzag, the leaves confined to the extremities of the flowerless branches; the racemes drooping, 5 to 9 inches long, consisting each of 6 to 12 large and very alluring blossoms, of a rich bright uniform fulvous or tawny colour, the lip large and pendent, convolute, and having its edge cut into myriads of glittering points, resembling golden moss. This delicate fimbriation, and the thin and membranous texture of the flower, render the peculiar colour still more striking. The same stems bloom for several years in succession. March—May; four days. 10s. 6d. to 21s.

Paxt. Mag. of Bot. 2, 172; Hooker, Ex. Fl. 1, 71; Paxt. Fl. Gard. 3, 84.

160. *D. fimbriatum oculatum* [a b]. Nepal. Similar to the preceding; but the flowers larger, and with a deep brown purple crescent in the centre of the lip. March, April; ten days. (This plant is sometimes called *D. Paxtoni*.) 15s. to 21s.

Bot. Mag. 71, 4160; Warner, Second Series, pl. 19.

161. *D. formosum* [a b]. Moulmein, &c., 1837. Flowers very large, waxy white, with yellow centre. August; six weeks.

As a white-flowered epiphyte (after the *Phalanopsis amabilis*) this beautiful Dendrobe is probably unrivalled by any Asiatic orchid. 31s. 6d.

Bot. Reg. 1839, pl. 64; Paxt. Mag. of Bot. 6, 49.

162. *D. formosum giganteum* [a b]. Moulmein. August, September; six weeks. 21s. to 31s. 6d.

Flore des Serres, 16, 1633.

163. *D. Fytcheanum* [a b]. Moulmein. Racemes a span or more in length, terminating the slender stems, which are 12 to 15 inches high, some of them bearing ten to twenty of the very beautiful and dazzling white flowers, the base of the lip alone having a faint tinge of crimson and a patch of yellow. 31s. 6d. to 42s.

Bot. Mag. 90, 5444; Bateman, Second Cent. pl. 102 (both as *D. barbatulum*).

The true *D. barbatulum* is a native of Bombay and the western peninsula of India, and is distinguished from the *Fytcheanum* by the sepals not being circular, by the totally different lip, and the colourless column, as well as by the swollen base of the stems. Racemes long and pendulous. Flowers pure white, with a green spur. Lip striated with pink. March.

Bot. Mag. 97, 5918.

164. *D. Gibsoni* [a b]. East Indies, 1837. A beautiful erect evergreen species, attaining the stature of about 2 feet. Flowers from the ends of the old pseudo-bulbs, in long pendulous racemes, ripe apricot yellow, the lip with a double purple shield. Distinguished from *fimbriatum*, to which it is nearly allied, by the petals not being toothletted. October; two to three weeks. 21s. to 42s.

Paxt. Mag. of Bot. 5, 169.

165. *D. Griffithianum* [a b]. Burmese Empire, 1838. A rare and extremely beautiful orchid, "double the size of *densiflorum* in all its parts." Flowers bright golden yellow, the racemes enduring four weeks. 63s.

166. *D. heterocarpum* [a b]. Ceylon, 1837. A small but very attractive plant, blooming in winter; the flowers fragrant, greenish or yellowish white, the large and pendulous lip yellow, with crimson featherwork in the centre. 10s. 6d. to 31s. 6d.

Bot. Mag. 79, 4708; Bateman, Second Cent. pl. 150.

167. *D. infundibulum* [a b]. Moulmein, upon the mountains. Petals ivory-white, broad and waxy, the serrated lip with a red or yellow blotch, and the bases of the two lateral sepals continued into a tapering and funnel-shaped spur fully an inch in length. A very lovely species, rivalling its near ally the *D. formosum*. May, June; six weeks. 31s. 6d.

Bot. Mag. 90, 5446; Bateman, Second Cent. pl. 122.

D. Japonicum. See remarks under *moniliforme*.

168. D. Jenkinsi [*a b*]. Guelpara. A pretty little orange-and-yellow flowered species. Pseudo-bulbs short, closely disposed along a prostrate or creeping rhizome. When in perfection, an absolute mass of golden bloom. Well adapted for growing upon a block. 10s. 6d., 21s.

Bot. Reg. 1839 ; pl. 37.

169. D. lasioglossum [*a b*]. Burmah, 1867. Stems tufted, slender, pendulous, 12 to 18 inches long. Flowers in abundant axillary racemes of three or four, produced upon the young growth, therefore in the company of leaves (in Dendrobies so often wanting), individually an inch and a half across, and ivory-white in every part, except that the lip is slightly purple-veined, and that the fringed crest is rosy-purple, the blossoms gaining thereby a specially chaste appearance. Very easily cultivated. 31s. 6d., 42s.

Bot. Mag. 96, 5825.

D. Linawianum, according to Reichenbach, is the proper name of the *D. moniliforme*, Hort.

170. D. lituiflorum [*a b*]. India. Pendulous and deciduous. Flowers in pairs, not unlike those of *D. nobile*, but much larger, with purple sepals, and a strikingly characteristic purple-edged white lip, with spot of the same hue as the margin, the form of this part seeming to be copied from that of a conch shell, curved, and far-projecting. March—May; two to three weeks.

Warner, Second Series, pl. 3.

171. D. Lowi [*a b*]. Borneo. Erect. Stems 12 inches high, the flowers usually from their summits, (like those of *formosum giganteum*), 2 inches across, bright yellow, the lip red-veined and crimson-fringed, the form and spotting peculiar and remarkable, and the spur resembling that of the common garden nasturtium. An attractive and extremely rare species.

Bot. Mag. 88, 5303 ; Bateman, Second Cent. pl. 189.

172. D. luteolum [*a b*]. Moulmein. Habit compact, and the bloom proceeding from the young growth, or in connection with the leaves ; in Dendrobies an excellent feature. Flowers 2 inches across, very pretty, uniform sulphur-colour, and distinguished by the edges of the sepals and petals being straight instead of waved or curled, as in most others of the genus, and also in regard to the Delphinium-like spur. Winter. 31s. 6d. to 63s.

Bot. Mag. 90, 5441 ; Bateman, Second Cent. pl. 185.

173. D. McCarthiæ [*a b*]. Ceylon, where it is the native "May-flower," pendent from the trunks of large trees. Stems 1½ to 2 feet long ; leaves few and lanceolate ; racemes two or three, each

bearing four or five beautiful and airy flowers, 3 inches across, and shaped like those of a *Thunia*, the sepals and petals very pointed, pink or cherry-coloured; the lip white, dark-purple veined, and in the recess full and solid purple. Free in flowering; easily grown in heat and moisture, and remaining in perfect beauty for six or eight weeks. 42s. to 63s. A specimen of this plant was recently exhibited, with more than 100 expanded flowers upon it.

Bot. Mag. 81, 4886; Bateman, Second Cent. pl. 158 (poorly coloured).

174. *D. macranthum* [a b]. Manilla, 1838. Stems pendent. Leaves thick, flat, fleshy and oblong; the handsome flowers in pairs or triples from the axils. Sepals and petals spreading, slender, the tips 2 to 3 inches asunder, and the whole of a uniform rosy pink or delicate lilac, with darker veins. Lip large and ovate, corresponding in colour, except that the broad recess is solid purple. Odour resembling that of druggists' rhubarb. April, May; two to three weeks. 31s. 6d., 42s.

Bot. Mag. 69, 3970; Lindley, Sertum, pl. 35; Paxt. Mag. of Bot. 8, 97; the two last as *macrophyllum*, which name seems to have been originally a slip of the pen for *macranthum*. The true *D. macrophyllum* inhabits New Guinea, and is quite a different thing.

175. *D. macranthum giganteum* [a b]. Manilla. Flowers 5 to 6 inches across, light-rose colour, the eye resplendent purple. A magnificent variety, the stems a full third part larger and longer than in the normal form. April, May; two to three weeks. 42s. to 63s.

Warner, pl. 26 (as *macrophyllum giganteum*).

***D. macrophyllum*.** See *D. macranthum*.

176. *D. moniliforme* [a b]. China and Japan, 1824. Stems 2 feet high, the joints becoming in age remarkably tumid and almost spherical, with intervening contractions, so as to give the idea of a succession of great beads, the general direction curiously zigzag. Flowers all the way up, as in *nobile*, showy, two together, the edges pale rose, the centre nearly white, spotless, but marked with red lines. December—February; two to three weeks. 21s., 31s. 6d.

Bot. Mag. 71, 4153; Bot. Reg. 16, 1314; Paxt. Mag. of Bot. 3, 77.

One of the interesting old Linnæan species (Sp. Pl. 1352) figured by Kämpfer as far back as 1712 (Amœn: Exot. pl. 865). According to Reichenbach, the proper name of this plant is *D. Linawianum*. He further states that the name *moniliforme*, as employed by botanists, is synonymous with *japonicum*, which pertains to a species quite different from the *moniliforme* of gardens, and of no great beauty.

177. *D. moniliforme majus*. 21s. to 31s. 6d.

***D. moschatum*.** See *D. Calceolaria*.

178. *D. nobile* [a b]. Macao, 1836. A magnificent old species, one of the most useful plants at command for winter and spring ornament, and perhaps the most favourite and familiar orchid of its class. In every collection of stove plants it should hold a foremost place, and be seen of large dimensions, being as easily grown as a geranium. Flowers 2 inches across, white, lilac-tinged, with deep purple spots at the extremities of the sepals and petals. December to June; four weeks. 5s. and upwards.

Lindley, Sertum, pl. 3; Paxt. Mag. of Bot. 7, 7.

179. *D. nobile pendulum* [a b]. Stems long and half-pendulous, the flowers larger and richer. Scarce. 31s. 6d. to 42s.

180. *D. nobile Wallichianum* [a b]. East Indies, 1849. Remarkable for the distinctness and the clearness of its colours. 15s., 21s.

181. *D. nodatum* [a b]. Moulmein. Stems knotted and branching. Flowers very pretty, 2 inches across, white; the lip bright orange. 15s.

Bot. Mag. 90, 5470; Flore des Serres, 15, 1582.

182. *D. palpebræ* [a b]. Moulmein, about 1848. A charming species, recalling *densiflorum*, but the erect and club-shaped stems more slender, with lanceolate and leathery leaves at the summit; the flowers in loose lateral racemes, white, with a deep yellow stain at the base of the lip, which is not only covered with velvet, but fringed at the base with long hairs that suggest the idea of eyelashes. (Also called *D. bicolor*.) 15s. to 42s.

183. *D. Parishii* [a b]. Moulmein. New and very beautiful, dwarf and compact in habit, with thick and leafless stems which are curiously bent downwards; otherwise like *D. nobile* and *D. monili-forme*. Flowers two or three together, purplish-rose, fading into white, the lip with rich purple interior markings, the whole forming a handsome thyrsus. Summer; two to three weeks. 15s. to 31s.

Bot. Mag. 91, 5488; Bateman, Second Cent. pl. 126.

184. *D. Paxtoni* [a b]. India, upon the Khasya hills, 1837. Stems 2 to 4 feet high. Flowers two together, orange, with dark centre. Differs from *chrysanthum* in having the petals serrated, and the surface and margin of the lip hairy. April, May; ten days. (This name is sometimes applied to the *D. fimbriatum oculatum*.) 21s. to 42s.

Paxt. Mag. of Bot. 6, 169.

185. *D. Pierardi* [a b]. India; occurring in various parts of the delta of the Ganges, where it usually grows upon the mango-trees. 1815. The flowers in their native country form pendent trails or festoons, 6 feet in length, and in England about half as long, the

whole extent of the stem being covered with the delicate pink or white translucent blossoms, two or three upon every pedicel. Lip pale primrose, excepting that near the base there are a few bright-purple lines. January—March. 10s. 6d. to 21s.

Hooker, Ex. Fl. 1, 9; Bot. Reg. 21, 1756.

Very nearly allied to the above, and perhaps only a remarkable variety, is the *D. cucullatum* of Bot. Mag., 48, 2242, and Bot. Reg., 7, 548. The flowers of this are inferior in size to those of the true *Pierardi*, and there is a difference in the shape of the labellum.

186. *D. Pierardi latifolium* [a b]. A rare, very strong-growing variety, the stout stems 5 feet long. 31s. 6d.

187. *D. Pierardi majus* [a b]. 15s. to 31s. 6d.

188. *D. primulinum* [a b]. India. Pendulous; flowers white and pink, in clusters of thirty to sixty. April, May. Two to three weeks. 31s. 6d. to 42s.

189. *D. primulinum giganteum*. 42s.

190. *D. pulchellum* [a b]. Sylhet. A very pretty small-growing species, the flowers translucent. Sepals whitish, petals pink. Does well upon blocks or in baskets. 7s. 6d. to 21s.

Bot. Mag. 84, 5037.

191. *D. sanguinolentum* [a b]. East Indies, 1842. Pendulous and evergreen; the stems verging on purple while young. Flowers pretty, size of those of *aggregatum*, fawn-white or yellowish, the sepals and petals tipped with violet; the lip with a scarlet blotch. May—September. 21s. to 31s. 6d.

Bot. Reg. 1843, pl. 6.

D. Schröderi. See *D. densiflorum album*.

192. *D. speciosum* [a b]. New South Wales, where, from its habitat, it holds the name of "Rock-lily." Introduced 1824. Flowers yellowish-white, wax-like, in erect and terminal racemes a foot in length, the pedicels long and green. Leaves 2—3, large and broadly-ovate. January—March. Three weeks. The gardener, it is said, who cannot preserve this plant in vigour, must be himself a curiosity, there being no plant more easy to cultivate. 10s. 6d., 21s. Bot. Mag. 58, 3074; Bot. Reg. 19, 1610; Smith's Exotic Botany, 1, 10 (1805).

193. *D. sulcatum* [a b]. Khasya, 1837. Resembles *densiflorum* both in habit and colour of flowers. Pseudo-bulbs remarkably flat and furrowed. May, June. 21s., 31s. 6d.

194. *D. tortile* [a b]. India, 1846. Sepals and petals *twisted*. Flowers very handsome, violet-coloured, the lip primrose, and not unlike those of *nobile*. May, June; four weeks. 15s., 21s.

Bot. Mag. 75, 4477.

195. *D. tortile roseum* [a b]. East Indies. A charming variety, distinguished by its rose-shaded white flowers. May, June; four weeks. 21s. to 31s. 6d.

196. *D. transparens* [a b]. Hills of Northern Hindustan; growing upon rocks and trees at an elevation of 5,300 feet. 1849. One of the most delicate and beautiful of a genus never failing in beauty and softness. Very like the *D. Pierardi*, but readily known by its short stems, long and obliquely emarginate leaves, and wide-spreading pinkish flowers, with obtuse petals, the lip stained with crimson in the middle, and the whole blossom *translucent*. A small edition, as it were, of *nobile*, by no means tender, and flowering profusely all the way up the pseudo-bulb. May. 10s. 6d. to 31s. 6d.

Bot. Mag. 78, 4663; Paxt. Fl. Gard. 1, 27.

***D. Wallichii*.** See *D. cærulescens*.

197. *D. Wardianum* [a b]. Assam. A very scarce and beautiful species; the strong and pendulous stems 2 feet in length; the flowers, two or three together from the axils, 3 inches across, white, tipped with purplish-rose, the lip rich orange with white margin, and a double crimson spot. February—May; two to three weeks. 42s. to 105s.

Warner, Second Series, pl. 19.

DENDROCHILUM.

Graceful little epiphytes of the Malayan Archipelago, the pseudo-bulbs numerous, short, and fleshy, each with a solitary leaf. Flowers very small, innumerable, and disposed in slender, close-set, and pendulous racemes 6 to 9 inches in length. Exquisite plants for suspended wire baskets.

198. *D. filiforme* [a b]. Manilla, 1836. Flowers yellow. June, July; three weeks. 42s. to 63s.

199. *D. glumaceum* [a b]. Philippines, 1838. Flowers greenish-white or yellowish, and very fragrant, the long and most elegantly drooping racemes resembling dishevelled ears of beardless wheat, while the leaves are like those of the lily-of-the-valley. Jan.—Dec.; three weeks. This one does best in a pot. 42s. to 63s.

Bot. Mag. 81, 4853; Bateman, Second Cent. pl. 134.

DISA.

Disa is a large genus of terrestrial orchids, natives of South Africa and of Abyssinia. The species vary considerably in habit, and are usually attractive, many possessing rose-coloured flowers, while in a goodly number there is a charming mixture of blue, white, green, and purple.

200. *D. grandiflora* [c. c]. Cape of Good Hope. This glorious plant is probably the most beautiful of the ground-orchids. It is spoken of by Dr. Harvey as the pride of the Table Mountain, where it grows in profusion upon the borders of streams and water-pools which are dry in summer, producing its gorgeous flowers in February and March. The stems are $2\frac{1}{2}$ feet high, furnished with broad, dark-green, and grassy leaves, and terminate in a cluster of blossoms which remind us of a scarlet gladiolus, being individually 3 to 5 inches across, and consisting of a cream-coloured cowl, brokenly streaked with crimson, and broadly ovate vermilion petals. Ray, in his *Historia Plantarum* (3, 586), briefly refers to it under the primitive name of "*Orchis Africana*," &c. Though scarce, there is no real difficulty in cultivating the *Disa*, the error being usually that it is dried to death. Potted in fibrous peat, and well drained, to give it too much water is more than any gardener can contrive. It is almost hardy, and does well in a very cool house, provided it be moist and shady. At Glasnevin, we are informed, it has been grown successfully out-of-doors. Something may be learned from Dr. Harvey's own account of it in the *Flora Capensis*, which work unhappily he was not spared to complete. It grows, he says, upon the steep, boggy, spongy margins of streams which contain water at all seasons, but which in winter must be so swollen as for the plant to be submerged. The *Restios* alongside give considerable shelter to the roots and foliage, but do not hinder the flowers from exposing themselves to the sunshine. At the season when the *Disa* blooms, the summit of the mountain is very frequently enveloped in mist. It is likewise very cold when the mist prevails, a strong south-east wind being experienced at the same time, and to this succeeds the scorching sun of latitude 33° . 21s. to 31s. 6d.

Lindley, Sertum, pl. 49; Bot. Reg. 11, 926; Bot. Mag. 70, 4073.

201. *D. grandiflora superba* [c. c]. 31s. 6d.

Warner, pl. 36.

EPIDENDRUM.

Epidendrum is an immense genus, almost confined to South America, and exhibiting, like *Dendrobium*, great diversities of habit and inflorescence, as well as of colour of flowers. Taken in the aggregate, the 300 species are by no means remarkable for brilliancy,

though now and then superb; their merit lies more particularly in their fragrance. The whole resolve into two great sections, those possessed of pseudo-bulbs, and those without, the greater portion of the ornamental ones belonging to the latter. The name is interesting from its association with the earliest days of orchid-knowledge, when, like *Polypodium* among the ferns, it served for almost everything orchideous that would not fit elsewhere, the genus being a sort of floral Refuge for the Homeless.

E. atropurpureum. The correct name of the *E. macrochilum*.

202. E. aurantiacum [*b c*]. Mexico and Guatemala. "Upon exposed rocks on the precipitous brows of ravines, where it is subject to great extremes of heat and cold." Flowers numerous, bright orange and crimson. March—May; six weeks. Similar in mode of growth to the *Cattleya Skinneri*. 10s. 6d. to 21s.

Bateman, Mex. and Guat. pl. 12.

203. E. dichromum [*b c*]. Bahia. A most beautiful species, the pseudo-bulbs clustered, 3 to 6 inches long, and bearing two or three erect and ligulate leaves, the flowers plentiful, paniculate, varying much both in size and colour, some being nearly pure white, others brilliant rose-colour. Sepals an inch long, linear-lanceolate; petals obovate; lip deeply three-lobed, rich crimson, paler towards the edges. 21s. to 31s. 6d.

204. E. dichromum amabile [*b c*]. Bahia, 1866. Flowers two inches across, pink or white, with purple lip; a most abundant bloomer, and very beautiful. Autumn. 21s. to 31s. 6d.

Bot. Mag. 91, 5491; Bateman, Second Cent. pl. 112.

205. E. macrochilum [*b c*]. Mexico, 1836. Pseudo-bulbs two-leaved, the leaves leathery and linear-oblong. Sepals and petals nearly equal in size, their tips incurved, green and dark purplish brown, or sometimes rose-colour, the lip usually white, with a blotch of crimson in the centre. Lasts three months. Does well in a basket, and grows best in a warm moist atmosphere, such as that of the pine-stove. June. 15s. to 42s.

Bot. Mag. 63, 3534; Bateman, Mex. and Guat. pl. 17.

206. E. macrochilum album [*b c*]. Guatemala, 1842. 21s.

207. E. macrochilum roseum [*b c*]. Guatemala, 1842. Lip large, and wholly dark rose-colour. 15s. to 42s.

Pact. Mag. of Bot. 11, 243; L'ill. Hort. 15, 541.

208. E. myrianthum [*c*]. Guatemala, at considerable elevations. A rare, tall-growing, and extremely desirable orchid, the leaves linear-lanceolate, the lilac-rosy flowers small, but very lovely, and collected at the ends of the stems into dense and branching panicles

which remind us of the thyrses of the common garden lilac, though in every way excelling them.

Bot. Mag. 92, 5556; Bateman, Second Cent. pl. 163.

209. *E. nemorale* [b c]. Mexico, 1840. A compact evergreen; the pseudo-bulbs 4 inches high, and two-leaved; the panicles very large, gracefully drooping, and producing twenty to fifty fragrant flowers 3—4 inches across, the delicate mauve-coloured sepals and petals linear-lanceolate, and spreading horizontally; the lip of nearly equal length, pendulous, and violet-striped. June, July; four weeks. 42s. to 63s.

Bateman, Second Cent. pl. 135. The others follow Lindley's error in calling this plant *verrucosum*, in Bot. Reg. 1844, pl. 51. Bot. Mag. 77, 4606; Paxt. Mag. of Bot. 13, 101. (Warner, pl. 13, figures *E. nemorale majus*.)

210. *E. prismatocarpum* [b c]. Central America. Evergreen, like the preceding, the fragrant and beautiful flowers borne in terminal and rather close racemes of 12—18, individually light greenish or creamy yellow, with transverse blackish-purple oval spots; the labellum pinkish or white, with a crimson triangle. May—July, enduring a long while. 21s. to 42s.

Bot. Mag. 88, 5336; Bateman, Second Cent. pl. 109; Warner, pl. 9.

211. *E. Skinneri* [c c]. Guatemala. Racemes paniculate, in good plants seven or eight in number, erect, 6—9 inches long, the flowers deep rosy-purple. Blooms in winter, and retains its beauty for three months. 15s. to 31s. 6d.

Bot. Mag. 68, 3951; Bot. Reg. 22, 1881; Paxt. Mag. of Bot. 15, 1 (var. *major*).

Though referred by some to the genus *Barkeria*, this plant is clearly an Epidendrum, since the column is wingless, and adnate to the labellum.

212. *E. Skinneri superba* [c c]. Guatemala, 1847. 21s. to 31s. 6d.

Warner, pl. 38.

***E. verrucosum*.** An old West Indian species, the name of which was accidentally given by Lindley to the *nemorale*.

For description, if wanted, see Walpers' *Annales*, 6, 414, No. 367.

213. *E. vitellinum* [c c]. Mexico, 1840. Stems erect, 8—12 inches high; the flowers 2 inches across, rich bright orange-scarlet. A remarkably cheerful plant, blooming in the summer, and lasting six or seven weeks. Being sub-alpine in native habitat, and rooting among mosses, &c., it is cultivated with ease. 10s. 6d. to 21s.

Lindley, Sertum, pl. 45; Bot. Reg. 1840, pl. 35 (a mere starveling). Paxt. Mag. of Bot. 11, 49; Bot. Mag. 70, 4107; Moore, pl. 13.

GALEANDRA.

A genus constructed upon the very beautiful and noble

214. *G. Devoniana* [a]. An inhabitant of the banks of the Rio Negro, whence it was introduced about 1840. The stems are 3—6 feet in length, round and slender, and terminate in shining half-pendulous foliage, from among which proceed the panicles of rather few but large and exceedingly handsome flowers. The purple and green-bordered sepals and petals are relatively small; the lip makes ample amends, opening forwards like a scroll, and disclosing the white interior, richly flushed with purple, and cross-barred and streaked with pink. Blooms at various seasons, and profusely. During growth this plant must have shade and abundance of moisture. (*Galeandra* is now included by Blume in the genus *Eulophia*.) 42s.

Bot. Mag. 77, 4610; Lindley, Sertum, pl. 37; Bateman, Second Cent. pl. 152; Warner, pl. 37; Paxt. Mag. of Bot. 8, 145.

GOODYERA.

A small genus of neat and modest ground-orchids, belonging almost exclusively to the northern hemisphere, and mostly to high latitudes or to mountain-ranges. The *G. repens*, found in Scotland, is spread over the whole of northern Europe, Asia, and America. The pretty flowers are produced in erect spikes, upon scapes nearly a foot high, and resemble little Roman hyacinths; the plants are chiefly valued, however, for their leaves, which are beautifully dappled. They do best planted in a mixture of moss and peat, with good drainage given by crocks.

215. *G. Dawsoniana* [a]. Malay Islands. Leaves on the upper surface blackish-green and very glossy, with lines of golden purple curving from the base to the apex. Flowers white. Perhaps more correctly called *Anæctochilus*. 10s. 6d. to 42s.

Flore des Serres, 18, 1830.

216. *G. discolor* [b]. China. Leaves velvety, rich dark green, purple underneath. Flowers white and yellow, produced plentifully in winter. Easy to propagate, and best grown in a temperature of 65°, with good ventilation. Now more exactly called *Hæmaria discolor*. 2s. 6d. to 10s. 6d.

Bot. Mag. 46, 2055; Bot. Reg. 4, 271.

217. *G. pubescens* [c]. North America, 1802. Leaves green, with silver tracery. Scape 6—12 inches high, producing a long spike of small but curious white blossoms. Kept in a pot, this plant has neither room enough to spread, nor soil sufficient. It is better, accordingly, to place it in the open border, using peat for its long fleshy and creeping rhizomes. 5s.

Lindley, Coll. Bot. pl. 25; Moore, pl. 92; Bot. Mag. 52, 2540 (var. *β. minor*).

HOULLETIA.

A small genus of tropical American epiphytes, the pseudo-bulb with one long and membranous leaf, and a raceme of large, handsome, and nodding flowers.

218. *H. Brocklehurstiana* [*b*]. Brazil, 1841. Scape 18 inches high. Flowers 2 inches across, the sepals and petals yellow, mottled with blood-red, the labellum purple at the apex. A very distinct and beautiful orchid. Deliciously fragrant. August; two to three weeks. 215. to 315. 6*d*.

Lindley, Sertum, 43; Paxt. Mag. of Bot. 9, 49; Bot. Mag. 70, 4072.

HUNTLEYA.

American epiphytes, few in number, and so nearly related to *Zygopetalon* that they are now usually referred to that genus.

***H. cerina*.** See *Zygopetalon cerinum*.

IONOPSIS.

Elegant little epiphytes of tropical America, the pseudo-bulbs emitting a few slender leaves, and an erect and slender scape, which ends in a copious panicle of usually pink flowers, in form resembling those of a violet.

219. *I. paniculata* [*b. c*]. Brazil. Panicle a foot or more in length, branching widely, the flowers innumerable, of a delicate malvaceous texture, the sepals and petals not more than a quarter of an inch long, but the lip large, broad, and two-lobed. The variety in colour is considerable, the bloom in some individuals being pure white, in others white and yellow, and in others heightened with violet. It lasts a long while, and is often so profuse, that a portion has to be thinned out lest the plant should overtax itself. October, November. 215.

Bot. Mag. 91, 5541; Bateman, Second Cent. pl. 184.

LÆLIA.

This admirable and queenly genus, like *Cattleya*, is exclusively South American, and located chiefly in Mexico, Guatemala, and Brazil. With *Cattleya* it closely accords also in habit and physiognomy, and in minute structure there is so little difference that now and then it becomes doubtful to which name a particular species should be referred. The *Cattleyas* have only *four* pollinia, the *Lælias* have *eight*; some of the former, however, disclose a tendency towards the higher number, and thus cancel the distinction. All the species are evergreen epiphytes, of compact and pleasing habit; the pseudo-bulbs are often elongated and stem-like;

the leaves are hard and thick ; and the flowers, which are borne freely upon terminal stalks, present a grandeur and brilliancy rarely emulated. Contemplating their splendour and vast dimensions, and remembering the Cattleyas, the Anguloas, the Lycastes, and several others, it is impossible not to be struck by the fact that the New World orchids supply the preëminent examples of grand individual flowers, while those of the eastern hemisphere (as in the species of *Aërides* and *Saccolabium*) present the richest and most charming natural wreaths. *L. acuminata*, *autumnalis*, *furfuracea*, and *majalis*, being dwarf, do well upon blocks.

220. *L. acuminata* [b]. Mexico, 1840. A pretty, delicate-flowering species ; the flowers white, with dark blotch. December, January ; three weeks. The Guatemalese, on account of its beauty, call this plant the "Flor de Jesu." 15s. to 21s.

Bot. Mag. 82, 4905 ; Bot. Reg. 1841, pl. 24 ; Paxt. Mag. of Bot. 10, 49.

221. *L. acuminata violacea* [b]. 1840. A fine variety, with violet-rosy flowers. 15s. to 21s.

222. *L. albida* [b c]. Guatemala, 1838. A plant with the graceful appearance of *autumnalis*, from which in habit it scarcely differs ; but the flowers are of a uniform and semi-translucent *white*, excepting a bright yellow streak upon the centre of the lip, and a few crimson dots near the base. They are 2 inches across, sweet-scented, and produced more abundantly, perhaps, than those of any other species of the genus. A very useful winter-flowering bridal orchid. December, January ; four weeks. 10s. 6d. to 21s.

Bot. Reg. 1839, pl. 54 ; Bot. Mag. 68, 3957.

223. *L. anceps* [b c]. Mexico. First flowered in England in 1834. Stems with two sharp edges, long and slender. Flowers three inches across, rosy-lilac, with dark purple lip, balanced lightly upon the ends of the stems, diffusing the scent of honey, and remarkably durable. Well-grown plants have produced twenty to twenty-four clusters, each consisting of three or four blooms. Dec., Jan ; four weeks. 10s. 6d. to 84s.

Bot. Reg. 21, 1751 ; Paxt. Mag. of Bot. 4, 73 ; Bot. Mag. 67, 3804.

224. *L. anceps Dawsoniana* [b c]. Mexico. A variety with creamy-white flowers, the lip with a large purplish blotch. 105s.

Floral Mag. pl. 530. May, 1871.

225. *L. autumnalis* [b c]. Mexico, 1836. General appearance that of *L. anceps*, but the leaves are shorter, the flowers lighter in colour, the throat is not golden, and the scent is more decided. Possesses, moreover, in a distinguished degree, the glistening vitreous

or crystalline petal-surface met with among the Lælias and some few other orchids. Autumn ; two to three weeks. 31s. 6d. to 42s.

Bateman, Mex. and Guat. pl. 9 ; Bot. Reg. 1839, pl. 27 ; Paxt. Mag. of Bot. 6, 121 ; Bot. Mag. 67, 3817.

226. L. Brysiana [b]. Brazil. Flowers three or four together, light rose colour, with deeper veins, and the lip dark crimson. Foliage dark and evergreen. 42s. to 63s.

227. L. cinnabarina [b]. Brazil, 1836. Brilliant, graceful, and eminently ornamental. Pseudo-bulbs 4—5 inches long, tapering upwards. Leaves of the same length, curved downwards by their own weight. Scape 12—18 inches long, bending beneath its four or five bright orange-red or yellow-scarlet flowers, which are 2 or 3 inches across, and poised elegantly. March—May ; six weeks. 21s. to 31s. 6d.

Lindley, Sertum, pl. 28 ; Bot. Mag. 73, 4302 ; Paxt. Mag. of Bot. 7, 193.

L. crispa. See *Cattleya crispa*.

228. L. elegans [b]. Brazil, 1850. Very like the *Cattleya superba*, except in colour, the sepals and petals varying from white to rose, with cinnamon spots ; the lip a voluptuous purple. A charming species, and easily managed. Known also as *Cattleya elegans*. Aug., Sept. ; three weeks. 63s.

Bot. Mag. 79, 4700 ; Bateman, Second Cent. pl. 156 ; L'Ill. Hort. 11, 402.

229. L. furfuracea [b c]. Mexico, 1838. Very like *L. autumnalis*, but the leaves, instead of being two or three together, are often solitary, and instead of curved and spreading, erect and straight ; the scape, moreover, bears usually only one flower, which yields little or no scent. Ovary covered with black and mealy glands. Height about 10 inches. Colours dark purple and rose. 21s. to 31s. 6d.

Bot. Mag. 67, 3810 ; Bot. Reg. 1839, pl. 26.

L. lobata. See *Cattleya lobata*.

230. L. majalis [a b c]. Oaxaca, 1838. A dwarf but splendid species, the flowers usually solitary, 4—6 inches across, rose-coloured or rosy-lilac, the centre of the lip white, with lilac spots. 31s. 6d. to 42s.

Paxt. Mag. of Bot. 12, 1 ; Bot. Reg. 1844, pl. 30 ; Bot. Mag. 93, 5667 ; Bateman, Mex. and Guat. pl. 23.

The May-flower Lælia is interesting as having taken the attention of the old Spanish naturalist Hernandez, a century and a half before orchids became popular, and in being figured, as *flos pulcherrimus*, in his famous work upon the productions of New Spain, p. 368. Of course only a rude woodcut.

231. *L. Perrini* [b]. Brazil. A very well-marked species, the flowers rosy-purple, the lip crimson, and distinctly three-lobed. Oct., Nov. See remarks under *Cattleya intermedia*.

Bot. Reg. 1838, pl. 2.; Paxt. Mag. of Bot. 13, 5.

232. *L. præstans* [b]. A dwarf, distinct, and beautiful species, which may be compared with the *Cattleya marginata*, blooming freely twice in the season, the flowers solitary upon the peduncles, rich crimson purple in the portions which are not lilac or rose-colour, and very durable. This beautiful plant is the *Cattleya pumila major* of Lemaire, *L'Illustration Horticole*, vi. 193, 1859.

Bot. Mag. 91, 5498. Bateman, Second Cent. pl. 128. F.

233. *L. purpurata* [b]. Brazil. A truly glorious orchid, and excepting among the Cattleyas, almost peerless. Pseudo-bulbs bearing each a solitary leaf 8 inches long; in the axil a pale green and flattened spathe the length of the finger, and resembling that of the *Cattleya labiata*; in the axil of this again, a stout flower-stem, bearing two exquisitely beautiful blooms, a span across, and the colour of which varies, in different individuals, from rose to the purest white, the lip presenting the accustomed and well-toned contrasts of yellow, deep rich purple, and streaks of crimson. Sepals linear-lanceolate; petals ovate-oblong; labellum 3 inches in length, the lower portions enveloping the column, the upper part unfolding a carpet of veiny purple that the palm of a child's hand would scarcely cover. May—July; three weeks. 10s. 6d. to £10 10s.

Warner, pl. 40; Paxt. Fl. Gard. 3, 96.

234. *L. superbiens* [b c]. Guatemala, 1840. Stems many, 4—5—9 feet high, each bearing ten to twenty gorgeous flowers, the blooms often as many as a hundred in all, 6—7 inches across, and presenting an inimitable mixture of purplish-rose, white, lilac, crimson, and yellow, the effect of the whole truly grand, distinct from that of every other Lælia, and rivetting the attention. Dec.—Feb.; four weeks. 31s. 6d. to 42s.

Bateman, Mex. and Guat. pl. 38; Warner, pl. 20; Paxt. Mag. of Bot. 11, 97; Bot. Mag. 70, 4090.

LEPTOTES.

A small genus of Brazilian epidendroid epiphytes, remarkable in having the sepals and petals nearly linear.

235. *L. bicolor* [a]. Brazil, 1831. A pretty plant, with thick evergreen and rush-like leaves, channelled on the upper side, the lip of the white flowers blotched with purple. The fruit exhales the fragrance of vanilla. Dec.—Feb.; four weeks. 21s.

Bot. Reg. 19, 1625; Bot. Mag. 66, 3734 (var. *glaucophylla*.)

LIMATODES.

Ground-orchids, natives of India and Java, and in structural characters nearly allied to *Calanthe*.

236. *L. rosea* [a b]. Moulmein, in the province of Martaban, 1850. Leaves oblong-lanceolate, plaited and deciduous. Scape erect, 10 inches high, bearing a raceme of many loosely-placed and deep rose-coloured flowers, two inches across. A sparkling and delightful species, presenting all the features of a *Calanthe* (with the addition of long and fusiform pseudo-bulbs), blossoming in winter very abundantly, and easily grown. 10s. 6d.

Bot. Mag. 88, 5312; Paxt. Fl. Gard. 3, 81.

LYCASTE.

Beautiful terrestrial orchids from tropical America, the number of species amounting to twenty or thirty. Some, being from elevated localities, are adapted for "cool culture." The leaves are plaited; the flowers large and showy, and borne singly upon scapes which arise from the base of the short and thick pseudo-bulbs.

237. *L. Harrisoniæ* [b]. Brazil, 1838. Pseudo-bulbs bearing each a solitary leaf. Flowers 3 inches across, pale yellow and waxy; the lip hairy, rich rose-colour, varying to purplish lilac. Blooms almost continuously, even when in the parlour. 7s. 6d.

Bot. Reg. 11, 897 (as *Maxillaria Harrisoniæ*).

238. *L. lanipes* [c c]. South America. Flowers cream-white, the lip a little paler and beautifully fringed. Blooms abundantly during October. 15s. to 21s.

239. *L. Skinneri* [c c]. Guatemala, 1842. An inestimable plant; evergreen, compact, very floriferous, blooming in winter, growing well under vines, and maintaining its beauty for three or four months, even after removal to the parlour. Flowers very enduring, 3—4—5—6 inches across, the sepals and petals pure white, but varying to many shades of rose, recurving in a peculiarly elegant manner; the lip almost covered with spots and streaks of carmine. Should have plenty of water while growing, and never be allowed to get dry, even when at rest. Nov.—Feb. 10s. 6d. to 15s.

Warner, pl. 10; Paxt. Mag. of Bot. 11, 1; Bot. Mag. 75, 4445; Bateman, Mex. and Guat. pl. 35 (as *Maxillaria Skinneri*).

For the first possession of this glorious orchid we are indebted to the tasteful ritual of its native country, where it was espied among the decorations of one of the altars.

MACODES.

Macodes is one of the genera of that most interesting little tribe of ground-orchids called the Physuridæ,—plants distinguished not so much for their flowers as for their leaf-beauty. The species in cultivation generally go by the name of the nearly-related genus *Anætochilus*.

M. marmorata. See *Anætochilus Lowii*.

M. Petola. See *Anætochilus Petola*.

MAXILLARIA.

Low-growing evergreen orchids from the tropical parts of America, many of them very curious and showy, and of constitution that allows of their being freely introduced into the sitting-room. The genus, as originally constituted, was heterogeneous, including the plants now called *Lycaste*, and various others.

M. cristata. See *Paphinia cristata*.

M. Harrisoniæ. See *Lycaste Harrisoniæ*.

M. Skinneri. See *Lycaste Skinneri*.

240. M. venusta [b]. New Granada; altitude 5000—6000 feet. Pseudo-bulbs two-leaved. Scapes one-flowered, the blossom large and snow-white, excepting the lip, which is yellow, delicately touched with red. Sepals and petals acuminate. A most beautiful species, easy, like the *Lycastes*, to cultivate, and continuing in bloom almost indefinitely. 31s. 6d. to 42s.

Bot. Mag. 88, 5296; Bateman, Second Cent. pl. 118.

MILTONIA.

Epiphytic evergreen orchids, represented in about half a score of species, one of which is Mexican, while the others are Brazilian. The showy flowers are borne singly, or a few together, upon scapes from below the pseudo-bulbs, and are distinguished from those of the neighbouring genera by the total absence of any kind of prominence or projection upon the base of the large lip. In habit the plants are compact; they occupy but little room, and, blooming in the later months of summer, are valuable decorative objects.

241. M. candida [a b]. Brazil, 1832. One of the handsomest of the genus, the stem erect, and bearing five or six flowers, 3½ inches across, the sepals and petals yellowish, mottled with brown; the lip white, marked with pink, and very much undulated. October; three weeks. 21s. to 42s.

Lindley, Sertum, pl. 21; Paxt. Mag. of Bot. 6, 241.

242. *M. candida grandiflora* [a b]. Brazil. 63s.

243. *M. Clowesii* [a b]. Brazil, 1840. Stem four to seven-flowered, the blossoms 3 inches across, yellow, spotted with brown; the lip lilac and beautiful white, changing to dull yellow. Sept., Oct.; four weeks. 21s.

Lindley Sertum, 34; Paxt. Mag. of Bot. 9, 241; Bot. Mag. 70, 4109.

244. *M. Clowesii major* [a b]. Brazil. 21s. to 31s. 6d.

245. *M. Moreliana* [a b]. Brazil. Sepals and petals uniform dark purple or maroon, the labellum pale red, beautifully veined and shaded. Habit the same as that of *spectabilis*, of which species this plant is probably a variety. Sept., Oct.; six weeks. 31s. 6d., 42s.

Warner, pl. 32; Gard. Mag. of Bot. 3, 41; Moore, pl. 49.

246. *M. Regnelli* [a b]. Brazil. Foliage pale green, as so common in *Miltonias*; flower-stems erect, bearing each three to six lovely flowers, the sepals and petals white, the lip lilac rose-colour. A rare and very beautiful species, commencing to flower in August, and lasting five or six weeks. 42s. to 84s.

Bot. Mag. 90, 5436; Bateman, Second Cent. pl. 182.

247. *M. spectabilis* [a b]. Brazil, 1835. Flowers 3—4 inches across, the sepals and petals very spreading, pale greenish white; the labellum extraordinarily large, roundish-cuneate, violet-coloured or rosy-crimson at the base, lighter towards the margin. Leaves two, sessile upon the pseudo-bulb. Of this very showy plant, a specimen lately exhibited bore at least forty flowers.

The pseudo-bulbs and leaves have a peculiar yellowish tinge, quite different from the vivid green of orchids in general. In most other plants this would be an indication of poor health, but here it is to be considered rather as "a subdued golden hue, too obviously natural to be unpleasing." 10s. 6d. to 63s.

Bot. Mag. 72, 4204; Bot. Reg. 23, 1992; Paxt. Mag. of Bot. 7, 97. F.

248. *M. spectabilis rosea* [a b]. Lip rose-colour. 63s.

L'III. Hort. 14, 524.

249. *M. spectabilis virginalis* [a b]. Flowers pure white, excepting a spot of rose. 31s. 6d.

L'III. Hort. 15, 573.

***M. Warneri*.** The same as *M. spectabilis rosea*.

250. *M. Warscewiczii* [a b]. Peru. Pseudo-bulbs long, flat, and two-edged. Flowers in a nodding panicle, copious, sometimes reaching fifteen in number, 2 inches across, the sepals and petals ligulate, their margins reflexed and undulated, the surface warm

cinnamon-brown, the tips golden-yellow. Lip sub-cuneate, dull violet-purple, with cream-white margins, and a broad pale yellowish-brown blotch. An exceedingly beautiful plant, satisfied with "cool culture," and disposed to bloom twice a year. (Also called *Oncidium fuscatum*, and *Odontoglossum Weltoni*.) 31s. 6d. to 63s.

Bot. Mag. 96, 5843; Flore des Serres, 18, 1831; Gardeners' Chronicle, Sept. 30, 1871, p. 1258.

ODONTOGLOSSUM.

A comprehensive and strikingly beautiful genus, found chiefly in the cool mountain-regions of Mexico, Peru, New Granada, and Venezuela, not far from the snow-line, where some of the members exist as epiphytes, and others as terrestrial plants. The amplitude of the blossoms, their delicate texture and tender colours; the unrelaxing flow of bloom which, in one species or another, they maintain throughout the year; the pleasing dimensions of the plants, and the ease with which they may be cultivated, give them a place in the favour of gardeners possessed by few even of the race they interpret so well. That they have a great future before them is quite clear; they are within the reach of cultivators who are restricted to greenhouse plants, and will serve, more perhaps than any other orchids, to render the order what it ought to be, familiar and domestic. The Odontogloss, like the Phalænopsids, stand foremost among the "ladies' orchids." Singularly well adapted for use at the ceremonies in which ladies are understood to take a paramount interest, one of the horticultural wits has gone so far as to say that whether the botanists allow it or no, the poet would certainly regard them as Thalamifloræ.

No slight interest attaches to the Odontogloss from the fact of their having been among the first to dispel the original superstition that an orchid from a tropical latitude must needs be kept in a stove, the truth being that when we have heard what is the latitude, we have still to ask what is the altitude at which a plant is found, and what may be its habitat and mode of life,—is it a ground-orchid, or one of the celestials that abide in the trees?

All the Odontogloss are evergreen, and all produce their flower-stems from the base of the pseudo-bulbs, the size of which varies considerably in the different species. To classify them is an easier task than with many orchids, a capital first distinction being found to exist in the peculiarities of the clinandrium or anther-bed, which is either provided with a deep fringe or a membranous border, as in *citrasium* and *pulchellum*;—or is without such fringe,—the latter section being then resolvable into two minor ones, namely, one comprising the species which invariably have a white and usually broad and flat labellum, such as *Cervantesii*, *membranaceum*, and *Rossi*; and the others those which usually have a yellow lip,—never white, and usually narrow, as *læve*, *grande*, and *Bictoniense*.

Some Odontoglots bear a close resemblance to Oncids; the *Odontoglossum nævium*, for instance, might be mistaken for *Oncidium phymatochilum*. The differences between the two genera are but slender, at the best, but there is one distinction which appears infallible, namely, in the Oncids the column is *short*, and tumid at the base in front, whereas in the Odontoglots it is *long*, and without any such tumour.

Mr. Bateman's superb monograph of this genus (pub. 1864) is well known. It may be interesting to mention in connection with it that in 1833 the ascertained species were only five!

251. *O. Alexandræ* [b c]. A most graceful and deservedly favourite plant. Stem 12—20 inches high, usually bearing 6—9 flowers, but in some of the varieties many more. Blossoms, individually, 3 inches across, snow-white, with shining golden spots upon the cordate-acuminate lip, varying, however, to beautiful combinations of white and rose, red, or purplish-brown. A specimen recently grown at Meadowbank, near Glasgow, is described as having produced over 120, distributed in four racemes. 21s. to 84s.

Warner, Second Series, pl. 23; Bot. Mag. 94, 5691 (var. *Trianae*), and 94, 5697 (var. *guttatum*).

***O. aureo-purpureum*.** See *O. luteo-purpureum*.

252. *O. Bictoniense* [b c]. Guatemala, 1837. A very stately species, the stems 2 feet high, and the racemes remarkably erect. Flowers, individually, an inch across, yellow, variegated with brown, the lip either light purple or nearly white. April; four weeks. 15s. to 21s.

Bateman, Mex. and Guat. pl. 6 (as *Cyrtochilum Bictoniense*); Bot. Reg. 1840, pl. 66; Moore, pl. 45.

253. *O. Bluntii* [b c]. Bogota. Sepals and petals white, the former beautifully fringed, both shaded with peach or rose, and spotted with crimson. Perhaps only a variety of *Alexandra*. 21s. to 84s.

Flore des Serres, 16, 1652.

The present plant is unquestionably superior to our No. 251, and compared with it, almost demands that in chivalrous respect to the illustrious Princess whose name is borne by the latter, there should be an exchange of appellations. The two forms were discovered so nearly about the same time that the right of priority is almost *nil*.

A specimen of the *Bluntii*, grown and flowered at Fairfield in December, 1870, produced a branching panicle of no less than twenty-eight of its lovely flowers, many of which were 4 to 4½ inches across. This plant received a Special Certificate at the meeting of the Royal Horticultural Society on December 18 of that year.

254. *O. Cervantesii* [b c]. Western Mexico, 1845. One of the diminutive species; the clusters 4—6 inches long, the flowers 2 inches

across, thin, delicate pink, the central portions with broken semi-circles of rosy crimson; the lip white. March, April; four weeks. 15s. to 21s.

Paxt. Fl. Gard. 1, 15; Bot. Reg. 1845, pl. 36; Paxt. Mag. of Bot. 12, 193.

255. *O. citrosmum* [b c]. Guatemala, 1840. A very beautiful lemon-scented species, the large white blossoms, with crescentic purple lip, each 2—3 inches across, constituting a lavish and pendulous raceme of fifteen to thirty. Lasts five weeks. 10s. 6d. to 42s.

Gard. Mag. of Bot. 2, 261; Bot. Reg. 1843, pl. 3.; Moore, pl. 47.

256. *O. citrosmum roseum* [b c]. Flowers inclined to rose-colour. 42s.

Warner, pl. 28.

257. *O. cordatum* [b c]. Mexico and Guatemala, 1837. Pseudo-bulbs rather small, and the one or two leaves lanceolate. Scape elongated, stiff and erect, bearing six to ten large, handsome, and remarkable flowers, the lanceolate sepals and petals (which in colour are yellow or yellowish green, blotched with rich brown) being very long drawn out, and curiously wavy and serpentine. Labellum large and cordate, white, ornamented with lilac and purplish red, or sometimes with amber and crimson. May; three weeks. 15s. to 31s. 6d.

Paxt. Mag. of Bot. 13, 147; Floral Cabinet, pl. 100; Bot. Mag. 81, 4878 (as *O. maculatum*); Bateman, Second Cent. pl. 167.

258. *O. coronarium* [b c]. Peru, at an elevation of 8000 feet. One of the finest of the genus, the flower-stems erect, 18 inches high, bearing as many as forty expanded blooms at once, the sepals and petals reddish-brown, edged with bright yellow, and the lip golden. Endures a long time. 84s.

259. *O. cristatum* [b c]. Peru. A pretty, compact, free-flowering species, the blossoms creamy yellow, spotted brownish-purple. 31s. 6d.

260. *O. crocidipterum* [b c]. New Granada. Resembles *O. nævium* and *odoratum*, but structurally differs from both, the wings of the column being fringed. The pseudo-bulbs likewise are different, being elliptical, shorter and blunter at the edges than in others of the genus, and in age becoming wrinkled and shrivelled instead of furrowed. Flowers pallid yellow, spotted with chesnut-brown. Odour aromatic. 42s. to 63s.

261. *O. gloriosum* [b c]. New Granada. "Flowers 1—3 inches across, deliciously fragrant, and over 100 upon a single spike. In the way of *nævium maius*." Has not yet bloomed at Fairfield. 31s. 6d. to 42s.

262. *O. grande* [b c]. Guatemala, 1839. Raceme 8 inches long, the flowers 4—6 inches across, beautiful glossy yellow, almost

covered with bands and blotches of shining brown. It has been exhibited with at least thirty blossoms simultaneously expanded. Autumn; four weeks. "This noble species has been found by Major Trevor Clarke to live in health, and to flower in the open air, in England, during the summer, under the shade of the laurel." 10s. 6d., 15s., 21s.

Bateman, Mex. & Guat. pl. 24; Paxt. Mag. of Bot. 8, 49.; Bot. Mag. 68, 3955.

263. *O. grande superbum* [b c]. A very fine variety. Imported specimens have produced eight flowers each. 21s.

264. *O. Halli* [b c]. Ecuador, Peru, at an elevation of 8000 to 9000 feet, where the mean temperature is 56°. Flowers 3½ inches across, yellow, blotched with brown, the lip crimson, with white border, and delicately fringed. 84s.

L'Illustration Horticole, xviii. 58.

265. *O. hastilabium* [b]. Santa Marta. Flowering-stems 3 feet high, often bearing 100 of the white, green, and purple blooms, which are an inch and a half across. A very useful plant for the summer and autumn, lasting two months. 31s. 6d., 42s.

Bot. Mag. 72, 4272 (and 82, 4919, var. *fuscatum*).

266. *O. Insleayi* [b c]. Mexico, 1840. A species resembling *grande*, but smaller, and of lighter proportions; the flowers eight or ten in number, and 2½ inches across. Valuable as blooming in the depth of winter. Three weeks. 10s. 6d. to 21s.

267. *O. Krameri* [b]. Costa Rica. Apparently related to *citrosimum*, though different in aspect; the flowers in pendulous clusters of three or four, individually 2 inches across, spotted yellow, purple, and brown, the lip violet. Considered as to delicate colouring, *Krameri* is perhaps the loveliest of its genus. 42s. to 63s.

Bot. Mag. 95, 5788.

268. *O. læve* [b c]. Guatemala, 1841. Sepals and petals yellow, with cinnamon-brown blotches; lip white, banded with violet. Fragrant. Blooms very freely, and will endure almost out-of-door treatment. May. 15s.

Bot. Reg. 1844, pl. 39; Moore, pl. 46.

269. *O. luteo-purpureum* [b c]. New Granada, where very cold. Flowers numerous, 2½ inches across, bright purple-brown, margined with golden-yellow, the beard or fringe of the lip also golden. 42s. to 63s.

270. *O. luteo-purpureum grande* [b c]. 42s. to 63s.

271. *O. luteo-purpureum radiatum* [b c]. 42s. to 63s.

272. *O. maculatum* [b c]. Mexico, 1838. Flowers in a pendulous cluster of six to eight, individually 3—4 inches across. Sepals and petals very acuminate, deep yellow, blotched with rich brown. Lip large and spreading. A lovely species. 21s.

Bot. Reg. 1840, pl. 30; *Pescatorea*, pl. 28; Moore, pl. 40. (The *maculatum* of Bot. Mag. 81, 4878, is *O. cordatum*.)

273. *O. membranaceum* [b c]. Guatemala, 1843. A pretty, small-growing species, not unlike *Cervantesii*, from which it differs in the superior size of the flowers; in these being less decidedly pink, or even perfectly white in every part; the petals more obtuse, and the lip deeply cordate, and spotted with brown at the base. December—April; four weeks. Very fragrant. 21s.

Bot. Mag. 82, 4923; Bot. Reg. 1846, pl. 24; Moore, pl. 44.

274. *O. nævium* [b c]. Andes of New Granada. One of the many beautiful Central American Odontoglosses which have arching panicles of star-shaped and densely sanguine-spotted white flowers, the sepals and petals 2 inches long, narrow, acuminate and wavy, and from the way in which the bloom is tossed about, giving the idea of a crowd of curious and dappled insects. In the present plant, when wild, the panicle is loosely branched, and of considerable size; under cultivation it becomes narrower and racemose, and the flowers exhibit a good deal of variety in colour. Pseudo-bulbs ovoid and flattened; the leaves narrow-oblong, the habit rather dwarf. Spring and early summer.

Paxt. Fl. Gard. 1, 18.

275. *O. nævium majus* [b c]. New Granada. Altitude, 8000 feet. A very fine variety of the preceding, larger, compact in habit, and flowering freely and continuously during April and May.

Warner, pl. 7.

276. *O. nebulosum* [b c]. Mexico; in very cold and exposed situations at an altitude of 10,000 feet. Flowers large, white and rose-colour. Probably a near relative of *Rossi*. May; four weeks. 21s. 6d.

***O. nobile*.** Reichenbach's name for the *O. Pescatorei*.

277. *O. Pescatorei* [b c]. New Granada. About 1851. A very ornamental, well known and hitherto rare species. Panicles, when the plant is growing wild, produced in great abundance, individually erect, 2—3 feet high, and at the base not much narrower. Flowers white, nearly 3 inches across, delicate and semi-transparent, the sepals with a faint rosy line along the centre, or altogether rosy; the lip decidedly and characteristically panduriform, and with a patch of yellow near the base, where also are two broad and laterated appendages of a deep crimson colour. April, May. 21s. to 42s.

Paxt. Fl. Gard. 3, 90; Warner, pl. 25; Flore des Serres, 16, 1624.

278. *O. Phalænopsis* [b]. Forests of Ecuador, 1850. Ever-green, small, and compact, the pseudo-bulbs closely set, the white flowers in a cluster of two or three, remarkably handsome, 2 inches across, the large and panduriform lip white like the rest, but fancifully painted with rose, and having its yellow base laced with carmine. April, May; four weeks. (Requires rather more heat than the rest of the genus.) 15s. to 42s.

Warner, pl. 30.

279. *O. platyodon* [b c]. Stems 2—3 feet high, very strong and vigorous, producing 80 to 100 flowers, the lips of which are pure yellow. In the lofty regions where this plant grows spontaneously, the water sometimes freezes, and snow lies during the night! 31s. 6d.

280. *O. pulchellum* [b c]. Mexico. First bloomed in England in 1841. Flowers in erect racemes of about ten, an inch in diameter, pure white, except a little orange at the base of the lip, and very fragrant. March, April; six weeks. 21s.

Warner, Second Series, pl. 13; Bot. Reg. 1841, pl. 48; Bot. Mag. 70, 4104.

281. *O. pulchellum majus* [b c]. 31s. 6d.

282. *O. pulchellum tenuifolium* [b c]. 15s.

***O. radiatum*.** See *O. luteo-purpureum*.

283. *O. Rossi* [b c]. Mexico. A small but very attractive species. Scape bearing one or two flowers. Sepals yellowish-green, blotched with brown; petals white, their bases spotted with purple. Winter.

Lindley, Sertum, pl. 25; Bot. Reg. 1839, pl. 48; Moore, pl. 42.

284. *O. Rossi superbum* [b c]. Mexico, 1859. Habit more robust than in the original form, and the flowers immensely superior, being individually 3—3½ inches across, and the white petals adorned with transverse crimson lines. The column is also subject to beautiful diversities of colour. For a plant of this variety, exhibited at the September 21st, 1870, meeting of the Royal Horticultural Society, we received a Special Certificate. Winter; four weeks. 21s. to 31s. 6d.

285. *O. Schlieperianum* [b c]. New Granada. Flowers similar in form to those of *O. grande*; self-coloured amber, and almost destitute of spots. End of summer. 21s.

286. *O. triumphans* [b c]. New Granada. A splendid species, well deserving its name, the flowers racemose, 3 inches across, yellow, blotched with bright cinnamon; the lip cordate, pure white, except that the centre is yellow, and the apex light rose. Spring. 42s. to 63s.

L'Ill. Hortic. 16, 609.

287. *O. Uro-Skinneri* [b c]. Guatemala. Flowers yellowish-green, with brown spots; the lip white. September—November; lasting a long time. 10s. 6d., 15s.

ONCIDIUM.

This truly beautiful and diversified evergreen and epiphytic genus belongs exclusively to tropical America, where upwards of 200 species have already been discovered. In the forests of the hotter parts of Peru and Brazil, in the West Indies, in that remarkable and fecund isthmus which connects the northern and southern continents, and in the *Tierra caliente* of Mexico, they grow in profusion, the wiry stems often attaining the length of many feet, and even yards (as in *altissimum*, *corynephorum*, and *falcipetalum*) and suspending above the traveller's head enormous panicles of broadly and elegantly lipped flowers, the predominant colour of which is yellow. Many have their blossoms marked with brown. Scent is very uncommon.

Under cultivation the Oncids are easily managed, not requiring much heat; some, indeed, belong to the "cool-culture" class. Many do extremely well suspended from blocks.

288. *O. æmulum* [c]. New Granada, upon the mountains, at a great elevation, 1870. A new and splendid species, the branching panicles reaching to a length of 15 feet, and bearing 100 to 150 flowers. 84s.

289. *O. ampliatum* [a b]. Panama and Guatemala. Pseudobulbs and leaves resembling those of the *O. Papilio*. Scapes ascending, 18—24 inches long, the upper portion branched. Flowers yellow, the back of the labellum *white*. April—June; six or eight weeks. 15s. to 21s.

Bot. Reg. 20, 1699.

290. *O. ampliatum majus* [a b]. A large and very handsome variety of the preceding. 15s. to 21s.

291. *O. aurosum* [a b]. A splendid cool-culture orchid, the 100 or 150 fine golden and red-spotted flowers borne, as so usual, in an immense panicle. 21s.

L'III. Hortic. 17, 34.

292. *O. bifolium* [b c]. Monte Video, 1811. A very beautiful small-growing species, the raceme or panicle not exceeding a foot in length, although the large bright yellow lip is in some individuals $1\frac{1}{2}$ inch across. May; three weeks. 21s. to 31s. 6d.

293. *O. bifolium majus* [b c]. A variety larger, still brighter, and in every way finer than the original. 21s. to 42s.

***O. Carthaginense*.** See remark under *O. luridum*.

294. *O. Cavendishianum* [a b]. Guatemala, 1836. Well known by its large and erect leaves, which are broad and fleshy. Flowers very abundant, in a panicle about 9 inches long; bright yellow, with dark spots. Winter; three weeks. 15s., 21s.

Bot. Mag. 67, 3807 (as *O. pachyphyllum*); Bateman, Mex. and Guat. pl. 3.

295. *O. Cebolleta* [a b]. West Indies, about 1835. Leaves terete and rush-like. Flowers small, paniculate, and spotted (usually) with black or crimson, excepting upon the labellum, which is quite plain. Spring. 10s. 6d.

Bot. Reg. 23, 1994; Bot. Mag. 64, 3568.

296. *O. crispum* [b c]. Brazil, upon the Organ Mountains. An orchid characterized by the very rare, if not unique colour of its large and numerous flowers, these being of a subtle reddish brown or chestnut-green, with a flush of bright bronze. Sometimes they are suffused with tawny-yellow, and occasionally they are pure orange. The central parts of the flower, which is 2 or 3 inches across, are yellow and red, contributing, with the broad and expanded lip, to give it a singularly novel complexion. The plant is stately and elegant, blooms at various periods, and remains a long time in perfection. 10s. 6d. to 21s.

Bot. Mag. 63, 3499; Bot. Reg. 23, 1920.

***O. cyrtochilum*.** Planchon's name for the *O. leucochilum*.

***O. diadema*.** The same as the *O. serratum*.

297. *O. divaricatum* [a b]. Brazil, 1826. Panicle 4 feet long. Flowers profuse, yellow, with brown spots. May; four weeks. 15s.

Pact. Mag. of Bot. 3, 4.

298. *O. flexuosum* [a b]. Brazil, 1818. Perhaps the most frequent and familiar, as well as one of the most dainty orchids of its class. The flower-panicle is several feet long, branched in an easy and wayward, but very elegant manner, and furnishes innumerable little golden sprays adapted for cutting. Jan.—December; four weeks. 5s. to 15s.

Bot. Mag. 48, 2203.

***O. fuscatum*.** A synonym of *Miltonia Warscewiczii*.

***O. intermedium*.** See remarks under *O. luridum*.

***O. juncifolium*.** One of several oncidids having terete and rush-like leaves, and generally confused under the name of the commonest, which is *O. Cebolleta*.

***O. Krameri*.** See *O. Papilio Krameri*.

299. *O. Lanceanum* [a. a]. Surinam, originally found growing upon tamarind-trees. Totally unlike the majority of the genus, and excelling all in the superb violet hue of the labellum, and in evolving

the spicy odour of the carnation. No pseudo-bulbs; the large leaves rising 12—18 inches high, from the crown of the root-stock. Flower-stem rather rigid and short-branched, the blossoms so numerous as to be almost corymbose. Individually, these are $1\frac{3}{4}$ — $2\frac{1}{4}$ inches across, the sepals and petals variegated with yellow, crimson, and brown. July—Sept.; four weeks. 15s. to 31s. 6d.

Bot. Reg. 22, 1887; Paxt. Mag. of Bot. 4, 169; Flore des Serres, 18, 1842.

Does exceedingly well in the pine-stove and in full sunshine, flourishing more in a basket than a pot.

300. *O. Lanceanum superbum* [a a]. 31s. 6d.

301. *O. leucochilum* [a b]. Mexico and Guatemala, 1835. A charming species, the rachis of the magnificent panicle attaining a length of 10 feet; the flowers greenish, speckled with crimson, and enlivened with a pure white lip, which often changes to yellow. Sept.—Nov.; five weeks. 15s.

Paxt. Mag. of Bot. 7, 241; Bateman, Mex. and Guat. pl. 1; Flore de Serres, pl. 522 (as *O. cyrtochilum*).

302. *O. Limminghii* [a b]. Caraccas. One of the gems of the genus, with the appearance, at first sight, of a *Sophranitis*. Pseudo-bulbs roundish, about three-quarters of an inch long. Leaves distichous. Peduncle 4—5 inches long. Flowers bright golden, the lip crimson-spotted. Rhizomes creeping. 10s. 6d. to 21s.

Flore des Serres, 18, 1827.

303. *O. luridum* [a b]. Tropical America, 1822. Panicles reaching to 9 feet in length. Flowers $1\frac{1}{2}$ inch across, brown and spotted. May, June; three weeks. 10s. 6d.

Bot. Mag. 64, 3603.

(The *Oncidium luridum* of the Bot. Register, 9, 727, is the *O. Carthaginense* of Swartz, which plant, in the "Floral Cabinet," pl. 60, bears the third name of *O. intermedium*.)

304. *O. luridum guttatum* [a b]. Jamaica. Flower-stems 3—4 feet high, the panicle having an air of great stateliness, the blossoms small and bright yellow, broken with blended brown and red. Excepting *Lanceanum*, and one or two other species, this is perhaps the handsomest of the Oncids. Interesting, too, as one of the few epiphytes known to Linnæus, who called it *Epidendrum guttatum* (Sp. Pl. 1351). June; three weeks. 42s.

Bot. Reg. 1839, pl. 16.

305. *O. macranthum* [a b]. Peru and New Granada. A truly magnificent plant, the panicles upon scandent stems, 6—12 feet long, and abounding in flowers 3—4 inches in width, the sepals purplish brown, tipped with yellow; the petals golden, streaked with blood-red; and the lip usually crimson-purple, with a white crest.

Remains a long time in perfection, and is enough, in itself, to ornament any moderate-sized conservatory. A specimen grown at Ferniehurst had forty-four blossoms open at once. 63s. to 105s.

Warner, Second Series, pl. 17.

306. *O. macranthum hastiferum* [a b]. 105s. to 147s.

307. *O. obryzatum* [a b]. New Granada. A beautiful and very free-flowering species, the flowers *fragrant*, and as the name imports, suggesting the idea of refined gold. 31s. 6d.

308. *O. ornithorhynchum* [a b]. Mexico, 1826. Plant about a foot in height. Panicle loose, half-pendulous with its own weight. Flowers at least an inch in length and breadth, delicate lavender, with a tendency to rose, the lip similarly dyed, but with the crest orange colour. The column and superincumbent anther present a certain likeness to the head and beak of a bird, giving additional interest to a very elegant and *sweet-scented* species, the fragrance resembling that of violets or new hay. Oct., Nov. 15s. to 21s.

Bateman, Mex. and Guat. pl. 4; Fl. Cabinet, pl. 136; Bot. Reg. 1840, pl. 10; Bot. Mag. 68, 3912.

309. *O. ornithorhynchum majus* [a b]. A variety with the panicles more branched and open. 21s.

***O. pachyphyllum*.** See *O. Cavendishianum*.

310. *O. Papilio* [a b]. Trinidad, 1825. A pre-eminently curious orchid, commonly known by the English translation of the word *Papilio*, which is intended to imply the resemblance of the flower to a butterfly—not so much in form, though no doubt there are quaint insects it might compare with, as in its occupying the very extremity of a wiry and flexuose stem, which arches away from the base of the pseudo-bulbs to the length of a yard, and seems to deposit its singular offspring on whatever leaf or plant it may happen to touch. Pseudo-bulbs dark purple. Leaf solitary, purple-brown, mottled with green like that of the dog's-tooth lily. Blossom usually solitary, the principal portion 2 inches across, yellow, heavily barred and blotched with brown, broad and handsome, and with three vertical antennæ several inches in length. Blossoms come out from the end of the stem for many years in succession, so it must not be cut off prematurely. Culture very easy. Probably the type of a distinct genus. 10s. 6d. to 42s.

Bot. Mag. 55, 2795, and 66, 3733 (var. *limbatum*); Bot. Reg. 11, 910; Paxt. Mag. of Bot. 5, 175.

311. *O. Papilio Krameri* [a b]. Central America, 1823. Similar to the original form, but the flower of richer colour, spotted instead of barred, and the central lobe of the lip denticulate and crisped. Stems cylindrical instead of compressed. Perhaps a species. 15s. to 42s.

312. *O. Papilio majus* [*a b*]. Panama. 10s. 6d. to 42s.

313. *O. pulvinatum* [*a b*]. Brazil, 1836. Panicles 6—10 feet long. Flowers bright yellow, the sepals and petals crimson at the base, the lip crimson-spotted, and bearing a curious downy cushion. June—August; six weeks. 15s.

Bot. Reg. 1839, pl. 42.

314. *O. sarcodes* [*a b*]. Brazil. Panicles 2—3—6 feet long, the thirty or forty flowers 2 inches across, either bright yellow, blotched and spotted with crimson, or pale yellow, with simple sprinkling of light brown. A very lively and effective species, the habit more compact than that of any other large-growing *Oncid.* Perhaps, as suggested by Mr. Berkeley, only a luxuriant variety of *amictum* (Bot. Reg. 1847, pl. 66), from which it differs only in the callus upon the lip, a part very variable, especially in *Oncids.* March, April; five to six weeks. 31s. 6d. to 126s.

Warner, pl. 23.

315. *O. serratum* [*a b*]. Peru. A very singular plant, the brown pseudo-bulbs each with two ensiform leaves at the apex, and several more below. The general flower-stem 9 feet long, partly twining, and with five or six lateral branches, at the extremities of which are four to six handsome flowers, 2—3 inches across, but the lip very small. The petals of these are delicately fringed and crisped, and drawn together in such a way as to form an arch above the column. In their native country the hue is a tender cinnamon-brown, the points shining yellow; in England the shades vary, the usual colour being brownish olive. 42s. to 63s.

Bot. Mag. 93, 5632; Bateman, Second Cent. pl. 194.

316. *O. sphacelatum* [*a b*]. Mexico and Guatemala. First flowered in England in 1841. Panicles 4 feet long; the flowers yellow, barred with dark brown; wings of the column long, notched, and bordered with brown, as if scorched. April, May; four weeks. 5s.

Bot. Reg. 1842, pl. 30.

O. Weltoni, a synonym of *Miltonia Warscewiczii*.

PAPHINIA.

A genus represented, so far as known, only by the species named below. (The *P. tigrina*, so called, belongs to the genus *Houlletia*.)

317. *P. cristata* [*a b*]. Trinidad and Demerara. Very curious and truly handsome; the solitary and pendulous peduncles emerging from the base of the pseudo-bulbs, and bearing two or three large flowers; the sepals and petals 2—3 inches long, lanceolate and

acuminate, the white ground variously striped and blotched with dark chocolate-brown, the lip rather small, almost entirely chocolate, and extremely curious in shape, the apex terminating in a radiating tuft or pencil of white filaments. Column yellowish-green, presenting a fine contrast. Leaves 4—6 inches long; scapes nearly twice their length. Blooms at various periods. 31s. 6d. to 42s.

Bot. Mag. 81, 4836; Bateman, Second Cent. pl. 117.

PERISTERIA.

A genus of three or four species, natives of tropical America, all with fleshy pseudo-bulbs, large and plaited leaves, and scapes bearing many handsome, waxy, and nearly globular blossoms, about $1\frac{1}{2}$ inch across, the column so formed as to have rendered the *P. elata* almost as famous with devotees as the Passion-flower itself.

P. Barkeri. See *Acineta Barkeri*.

318. *P. elata* [a]. Panama, 1826. (The "Dove-plant" or *El Spirito Santo*). Pseudo-bulbs as large as swans' eggs, green and striated. Leaves 3—5, attaining in luxuriant individuals the length of a yard, and a width of 6 inches. Flower-stems 4 to 6 feet high, the upper third portion putting forth the beautiful, cream-white, and fragrant blossoms, the purity of which is disturbed only by some lilac specks near the base of the lip. The column resembles the conventional "dove" of the painters of sacred subjects. First flowered in England in 1831. August; four to eight weeks. 10s. 6d., 15s., 21s.

Bot. Mag. 58, 3116.

P. Humboldtii. See *Acineta Humboldtii*.

PESCATOREA.

The small genus once so denominated is now merged in *Zygopetalon*.

PHAIUS.

The tall-stemmed, erect, and noble-looking evergreens which constitute this genus, are natives, to the number of eighteen or twenty, of the tropical and sub-tropical parts of the eastern hemisphere. They are mostly terrestrial; the leaves are large, broad, and plaited; and the scapes bear a number of large and handsome, though not always brilliant flowers.

P. albus. See *Thunia alba*.

P. Bensoniæ. See *Thunia Bensoniæ*.

319. *P. grandifolius* [a. b]. China. In Hong Kong common by the sides of streams, 1778. Scapes quite erect, sometimes 3 feet

high. Leaves all radical, large and ovate-lanceolate. Flowers externally white, internally of a somewhat impurpled chestnut-brown, the white lip shaded and streaked with crimson. A striking plant, by no means tender, requiring a good deal of air, and admitting of easy propagation. Feb., March; five weeks. 3s. 6d., 10s. 6d. to 42s.

Bot. Mag. 44, 1924 (as *Bletia Tankervilleae*). See also the capital old figure under the name of *Limodorum Tankervilleae*, in Andrews' Botanist's Repository, pl. 426 (1805).

320. *P. maculatus* [a b]. Nepal, 1823. Leaves spotted; flowers bright yellow, produced in abundance, and very showy. February, March; three weeks. 10s. 6d.

Bot. Mag. 68, 3960.

321. *P. Wallichii* [a b]. India, on the Khasya hills, sheltered by trees, 1837. A fine and vigorous plant, the leafy flowerless stems 2—3 feet high, the leafless flowering ones surpassing them, and bearing beautiful buff-coloured and purple shaded blossoms, 4—5 inches across, the sepals and petals narrow, acuminate, and wavy. May; six weeks. 10s. 6d.

Pact. Mag. of Bot. 6, 193.

PHALÆNOPSIS.

The Phalænopsids constitute a genus of about a dozen exquisitely beautiful epiphytes, all natives of the Indian Archipelago or thereabouts. Stems are almost wanting; the leaves are distichous, broad, thick, and leathery; the inflorescence is racemose or paniculate, the flowers often in two rows along the principal stalk, descending, as it were, in a copious stream, which is rendered the more effective by their breadth and flatness. Individually they are always of considerable size, the petals remarkably exceeding the sepals, and of the most delicate hues, rose and white having the preference. These plants are all of easy culture; the main point being never to let them get too dry, since being destitute of pseudo-bulbs, or home-reservoirs of nutriment, they require larger and more regular supplies from without. Their growing season extends from March to the end of October. Phalænopsids are further interesting from the ease with which the flowers may be artificially fertilized, and from the curious phenomena which attend the reception of the pollinia by the stigmatic cavity. Before the pollinia are communicated, the cavity gapes widely: in the course of a few hours the sides draw together, and eventually the pollinia are held so fast that they can only be removed by tearing or with the knife.

322. *P. amabilis* [a]. Borneo, Java, &c., 1836. Of this matchless epiphyte it is not possible to frame an adequate description. No drawing can represent the purity of its whiteness, or the delicacy of its substance, which may be feebly compared to the softest-

and smoothest leather ; nor is there a likeness anywhere for the configuration of the blossom, unless we can think of a germander-speedwell flower a hundred times enlarged, and the azure exchanged for snow. Upon the wooded coasts of the warm islands of the Indian seas, it occurs in profusion, growing upon thick-stemmed and mossy trees, especially mangoes, sometimes mounting to the very tops, and living in the full sunshine ; clinging, in any case, by means of thick, white, entangled roots, and suspending broad and ample racemes of its immaculate bloom, on scapes 2 or 3 feet long, every cluster giving the idea of a little cascade. These admirable characteristics are all realized more or less perfectly, under cultivation, with the addition of long continuance of bloom, since if the flower-stems be carefully cut just below the point of origin of the lowest blossoms, new flowering-branches will speedily be emitted, and the plant be preserved in beauty for a period of seven or eight months. No pseudo-bulbs are produced. The stem is short and simple. The leaves, which issue from the crown of the root-stock, are 6—18 inches in length, broadly oblong-lanceolate, thick and stiff. The flowers (in England) hang in a loose raceme, ordinarily of 8 to 12, but sometimes many more ; the blossoms individually 3 inches across, pearly, except that the sepals have a faint tinge of yellowish-green, and that the lip is lightly veined and flushed with purple and gold. A great peculiarity in the lip is the presence of a pair of curious tendrils. Suspended from the roof of the orchid-house, a well-grown plant will have as many as fifty flowers open at once, and hundreds of buds in various stages of preparation. The first mention of this plant is in the *Herbarium Amboinense* of Rumphius, Vol. vi. p. 95 (ed. 1750), where likewise is a tolerable drawing, as of about a dozen other orchids. Linnæus of course took it up, calling it *Epidendrum amabile* (Sp. Pl. 1351). The first one or two plants introduced to England were brought over by the late Mr. Cuming, and so highly were they valued, that the noble owner of Chatsworth willingly paid for his new prize a *hundred guineas*. In perfection in early summer. 105s.

Bot. Mag. 73, 4297 ; Bot. Reg. 1838, pl. 34 ; Paxt. Mag. of Bot. 7, 49.

323. *P. Cornu-cervi* [a]. Moulmein, 1864. Rachis of the raceme flattened and thickened ; the flowers arising from marginal notches, $1\frac{1}{2}$ or 2 inches across, greenish-yellow, with transverse spots of cinnamon-red in two or three longitudinal rows ; four or five open at once out of a total production of six to twelve. 84s.

Bot. Mag. 92, 5570 (as *Polychilus Cornu-cervi*) ; Bateman, Second Cent. pl. 178.

***P. equestris*.** Reichenbach's name for the *P. rosea*.

324. *P. grandiflora* [a]. Similar to the *amabilis*, but with larger flowers ; the lip beautifully diversified with yellow. Leaves light-green. January—December. Probably a luxuriant variety of the *amabilis*, like which, in its sultry native islands, it loves the neighbour-

hood of the sea, flourishing in open and sunshiny places close to the habitations of mankind, clinging to the fruit-trees, and thus claiming to be reckoned among the domestic plants. 42s. to 105s.

Bot. Mag. 86, 5184; Bateman, Second Cent. pl. 114.

325. P. Lowi [*a*]. Moulmein. Growing upon rocks exposed to the sun, and in the rainy season deluged. Flowers of medium size, bluish-white, the lip small and purplish. A very fine and attractive species. 42s. to 63s.

Warner, Second Series, pl. 15; Bot. Mag. 88, 5351; Bateman, Second Cent. pl. 168.

326. P. Lüddemanniana [*a*]. Philippine Islands. Racemes about 6 inches high. Flowers 2 inches across, bluish colour, delicately barred all across and throughout their whole length with amber and amethyst, varying to bright rose-colour; well-grown plants will bear upwards of forty. 63s. to 105s.

Bot. Mag. 91, 5523; Bateman, Second Cent. pl. 133; Flore des Serres, 16, 1636.

327. P. Parishii [*a*]. Burmah—inhabiting the forests. Introduced 1864. A lovely little epiphyte, almost without stem; the 2—4 leaves oblong-lanceolate; the flowers in short racemes of 6—10. Sepals and petals milk-white; the lip partly white, and partly of the colour of the globe-amaranth.

Bot. Mag. 96, 5815.

328. P. rosea [*a*]. Manilla. A very charming orchid. Leaves a deep green; the scape from amid them, 18—24 inches long, branched, and of an intense and shining purple. Flowers from the tips of the semi-pendulous branchlets, small, but very numerous, star-like in figure, rosy, the lip brilliant ruby, warmed with yellow at the base, and at the upper part enriched with intense violet. The trowel-shaped lip is destitute of the tendrils so remarkable in *amabilis* and *grandiflora*. Very free in flowering, and continues a long time. 84s.

Bot. Mag. 86, 5212; Paxt. Fl. Gard. 2, 72; Flore des Serres, 16, 1645.

329. P. Schilleriana [*a*]. Manilla; growing upon the trunks and upper branches of the forest-trees, in moist and shady places, where the temperature is high. Introduced about 1858. This is one of the most beautiful plants of its family, and needful to the completeness of every collection, however simple. The leaves equal those of many “fine foliage” plants, having a rich dark-green ground, marbled with white or gray, while the multitudinous lovely flowers, which are produced upon branching and elegantly deflected stems 1—3 feet long, present the most exquisite and delicate shades of mauve, white and yellow, with spots of reddish-cinnamon, no two plants exactly alike when in bloom, the depth and proportions of the colours changing with every fresh one we examine. In measure they are 2—3 inches across. A plant of this species recently described in the

Gardeners' Chronicle, bore no less than 280 blossoms, distributed in many panicles. One of our own produced 120, all open at once. January—December; six to eight weeks. 105s. to 21l.

Bot. Mag. 91, 5530; Bateman, Second Cent. pl. 171; Warner, pl. 1.

PHYSURUS.

Most of the rather numerous species of this genus belong to the western world; the few remaining ones are natives of the East Indian Islands. Like *Anæctochilus* and *Macodes*, their immediate relatives, they are all terrestrial in habitat, procumbent, or nearly so, unpretending as to bloom, but with leaves that fully compensate.

330. *P. argenteus* [a]. Brazil. Leaves ovate, 2—3 inches long, the surface delicate green, and embroidered in a reticulate manner with silvery white.

PLËIONE.

The Plëiones are delightful little orchids from the mountains of Upper Nepal, where they grow upon mossy rocks and the moss-covered trunks of trees. In structure of flower, they strongly resemble the genus *Calogyne*, to which they are by some botanists referred. There is little, indeed, except habit, to keep them apart, and the best collective name for them would probably be *Alpine Calogynes*. The densely-clustered pseudo-bulbs are short, curiously marked, and prettily mottled, and unlike those of other orchids, while the rhizome is perennial, are in themselves (at all events in certain kinds) only annual. In some species the flower comes first, as in the colchicum, and the leaves do not shoot up until the bloom is over; in others, the foliage appears at its accustomed period, but is so quickly deciduous that the flowers are similarly unvestured. The deficiency of leaves is, of course, soon remedied by carpeting the soil with selaginella. The flowers, which are always large and sprightly, come out in great abundance, one to every bulb; in colour, they are purple, or lilac, or rose, the handsome and conspicuous lip luxuriously ornamented with crimson streaks, and with dentate lines of yellow. So powerfully do they recall the English flower, so striking is the resemblance of hue and texture, that they have gained for their beautiful genus the name of the "Indian crocus." A well-grown panful will present two or three dozen flowers expanded at once, and as they make their appearance in the depth of winter, as decorative plants, these sweet Plëiones are simply inestimable. Nothing can excel them as floral pleasures for the parlour-table or the boudoir, and as a solace for the invalid, they are second only to primroses. All the species are of very easy culture, requiring only to be kept cool and dry during their season of rest, and to be encouraged with a

fair amount of warmth, moisture, and bright light when inclined to grow, and while growth is in progress. The proper soil is decayed leaf-mould, with the addition of a small quantity of coarse white sand, the surface neatly carpeted with living sphagnum.

331. *P. humilis* [b c]. Upper Nepal; Sikkim, at an elevation of 7,000 to 8,000 feet. Flowers white, the lip with orange, or sometimes rose-coloured spots and veins, six of which, as well as the border, are fringed. Two to three weeks. 31s. 6d.

Paxt. Fl. Gard. 2, 51; Bot. Mag. 93, 5674 (both as *Calogyne*).

332. *P. Lagenaria* [b c]. Pseudo-bulbs flask-form. Sepals and petals deep rose-colour, linear-lanceolate and very acuminate; the lip white, with a yellow disk, and crimson streaks at the margin. 10s. 6d.

Bot. Mag. 89, 5370 (as *Calogyne*); Bateman, Second Cent. pl. 107; Paxt. Fl. Gard. 2, 39, fig. 2; Warner, pl. 17; L'ill. Hort. 14, 510.

333. *P. maculata* [b c]. Assam. Pseudo-bulbs umbonate. Flowers pure white; the sepals and petals ovate acute; the lip as in the preceding. October, November; three to four weeks. 10s. 6d.

Bot. Mag. 79, 4691 (as *Calogyne*); Paxt. Fl. Gard. 2, 39, fig. 1; Wallich, 1, 53 (as *Calogyne*).

334. *P. præcox* [b c]. Described by Dr. Royle as ornamenting with its large flowers the branches of oaks, in 30° N. lat., at an elevation of 7500 feet, but only during the moisture of the rainy season. A pretty coloured drawing of it appeared as far back as 1806 in Smith's "Exotic Botany," vol. ii., pl. 97. It was then *Epidendrum præcox*. Messrs. Loddiges possessed this plant thirty years ago.

Paxt. Mag. of Bot. 14, 7.

335. *P. Wallichiana* [b c]. Himalayas. Differs from *præcox* in having a much shorter spur and a ventricose bract, and in the pseudo-bulbs being almost truncated. Also in having the crests of the lip very short, and confined to the disk, instead of reaching nearly to the point. Flowers of a glowing rose-colour, fully 3 inches in length, solitary, or sometimes in couples, and faintly scented. Appears to be only a variety of *præcox*. 5s.

Bot. Reg. 1840, pl. 24; Bot. Mag. 76, 4496; Paxt. Mag. of Bot. 6, 25; Wallich, 1, 54; Moore, pl. 12 (all as *Calogyne*).

POLYCHILUS.

P. Cornu-cervi is the same as *Phalanopsis Cornu-cervi*.

PREPTANTHE.

A genus by some separated from *Calanthe*, and comprising the three deciduous species commonly known as *C. vestita*, *C. Veitchii*, and *C. Turneri*.

RODRIGUEZIA.

The orchids called on a former page by the name of *Burlingtonia* are sometimes referred to this genus, which, like the last-named, belongs entirely to tropical America and the West Indies.

SACCOLABIUM.

A considerable genus of evergreen epiphytic orchids, natives of India and Madagascar, and including some of the loveliest plants in nature. The habit is compact; the stems are densely clothed with long, arching, and leathery leaves, disposed in two opposite ranks, as in *Aërides*, some of them producing from their axils either short and erect spikes, or curving and wreath-like or ringlet-shaped racemes of rather small but abundant and often enchantingly fragrant flowers, waxy in texture, and usually white, mottled with rose, purple, violet, and pink, but occasionally yellow. The length of these glorious and unexcelled racemes is sometimes one or two feet.

336. *S. ampullaceum* [a]. Sylhet, 1837. Stem short, and generally simple. Leaves ligulate, 5—9 inches long, regularly distichous, and remarkably thick. Racemes axillary, six or eight in fine specimens, sessile, shorter than the leaves, and having the flowers so closely set as to seem cones or elongated globes of deep rose, and to be giving birth to foliage instead of originating in it. May, June; eight weeks. Grows slowly, but is easily managed. 42s. to 63s.

Lindley, Sertum, pl. 17; Bot. Mag. 92, 5595; Bateman, Second Cent. pl. 186; Paxt. Mag. of Bot. 13, 49.

337. *S. Blumei* [a]. Java, 1835; also in Burmah, upon the plains. Racemes broad and short. Flowers large, destitute of spots, white and rose colour, the sepals and petals each with a streak of violet below the point. Lip rose-colour. Produces, in well-grown plants, a dozen racemes. August, September; three weeks. 42s. to 63s.

Lindley, Sertum, pl. 47.

338. *S. Blumei majus* [a]. Moulmein, 1835. August, September; three weeks. 42s. to 63s.

L'III. Hortic. 15, 545.

339. *S. Blumei majus Dayi* [a]. Moulmein. A very free-flowering variety. Racemes 22 inches long, the flowers white, spotted with purple. August, September; three weeks. 42s. to 63s.

340. *S. curvifolium* [a]. India and Ceylon. An elegant, small-growing species, but very well marked, the racemes 6—9 inches

long, the crowded flowers bright orange-scarlet. May, June; eight weeks. 42s.

Bot. Reg. 1847, pl. 58; Bot. Mag. 88, 5326 (both as *S. miniatum*); Bateman, Second Cent. pl. 130.

341. *S. giganteum* [a]. Burmah, growing in the jungles. Flowers very large (for the genus), in long close racemes, and exquisitely fragrant. Sepals and petals cream-coloured, each with a row of amethyst-coloured dots; the lip dark purple. Blooming at various periods, winter included, and the flowers enduring a long while, even after being cut, as a decorative plant this species is very valuable. Easy of cultivation, but calls for patience while the plant is growing to the size needful to good bloom. June. 63s.

Bot. Mag. 93, 5635.

342. *S. guttatum* [a]. Malabar, 1820. Racemes slender, 15—20 inches long, the flowers blush-coloured, spotted with purplish-rose. May and June. 105s.

Bot. Mag. 70, 4108.

A remarkably handsome species, but probably one of a group represented also by *S. Blumei*, the two forms being apparently connected by intermediates.

343. *S. guttatum giganteum* [a]. India. An exceedingly fine variety of a fine plant. Racemes 15—20 inches long, the flowers of more decided colours, and the leaves longer. June, July; three to four weeks.

***S. miniatum*.** The same as *S. curvifolium*.

344. *S. præmorsum* [a]. Malabar, 1840. Resembles the *guttatum*, but has remarkably præmorse leaves. Racemes 15—20 inches long; flowers white, thinly spotted with lilac. May, June; three weeks. 63s. to 105s.

345. *S. retusum* [a]. Java. Flowers white, spotted with rose, the abundant racemes 15—20 inches long. Strong-growing and early-flowering. May, June; four weeks. 84s.

346. *S. violaceum* [a]. Manilla. Racemes 15—20 inches long. Flowers white, the petals spotted with mauve and traversed with rose-colour, the lip of the same colour; large and delightfully fragrant, scenting the house in which they are kept. A magnificent species. Dec.—Feb.; twelve weeks. 84s.

Warner, pl. 14.

347. *S. violaceum Harrisoniæ* [a]. A profusely blooming *pure white* variety of the preceding, the leaves long, broad, and thick. Upon an imported plant only 6 inches in height, we had seven racemes, each of 13 inches in length; often, however, they reach to 21 inches. 31s. 6d. to 42s.

Bot. Mag. 90, 5433 (as *Harrisonianum*).

SELENIPEDIUM.

For remarks upon this genus of ten species, separated by Professor Reichenbach from *Cypripedium*, see the last-named (p. 52).

SOBRALIA.

Tropical American ground-orchids, to the number of about twenty-five species, quite different from almost all others in having slim and reedy stems, very rarely branched, thickly clothed with foliage, and attaining a height of many yards. In the woods of Brazil, Peru, and Mexico, especially where dry, rocky, and hot with sunshine, they are gregarious, and form dense thickets. The flowers are produced near the summits of the stems, constituting terminal racemes, and are often very large, lily-like, and showy. The leaves also are large, stiff and plaited, like those of some of the dwarf palms.

348. *S. macrantha* [b]. Guatemala, 1842. Stems 5 feet high, from a thick mass of roots; flowers deep purple rose colour, 6—7 inches across; the lip much larger and longer than the sepals and petals, similar in colour, but with a yellow recess. April, May—lasting in succession of bloom for several weeks, though the flowers, as in most of the genus, individually are short-lived. 21s.

Bot. Mag. 75, 4446; Bateman, Second Cent. pl. 37.

349. *S. macrantha splendens* [b]. Flowers darker in hue, and the plant by no means so tall. 21s.

Pact. Mag. of Bot. 14, 241.

SOPHRONITIS.

The four or five known species of this genus are evergreen Brazilian epiphytes, perfect little gems, even among orchids, nestling when wild among the moss upon the branches of old trees, and producing from their one-leaved pseudo-bulbs, either solitary flowers, or few-flowered racemes of usually small, but always brilliant, scarlet or violet bloom. In structure, though not otherwise to be compared, the flowers approach those of the *Lalias*, like which they have eight pollinia, but *equal* instead of *unequal*.

350. *S. cernua* [b]. Rio Janeiro, 1836. Leaves ovate, one inch long, cordate at the base; raceme corymbose, nodding, four to seven-flowered, the blossoms brilliant scarlet, with yellow lip. May; six weeks. 10s. 6d.

Bot. Reg. 14, 1129; Bot. Mag. 65, 3677 (very poor.)

351. *S. grandiflora* [b]. Rio Janeiro, growing on trees upon the mountain-heights of the Organos, where rime-frost is seen in the

morning! Introduced 1837. Pseudo-bulbs like those of a *Cattleya*; leaves ovate-lanceolate; flowers solitary, 2—3 inches across, bright orange-scarlet, the lip yellow near the base. Of this grand species there are many varieties, some with very pale flowers. Nov., Dec.; six weeks. 10s. 6d., 21s.

Pact. Mag. of Bot. 9, 194; Lindley, Sertum, pl. 5, fig. 2; Bot. Reg. 22, 1919 (as *Cattleya coccinea*).

352. *S. violacea* [b]. Brazil, upon the Organ Mountains, at an elevation of 7,000 to 8,000 feet, where the mean temperature is 59°. Introduced 1840. Leaves very narrow; flowers violet-colour. Readily told by its numerous dry and scaly bracts. 21s., 31s. 6d.

STANHOPEA.

A gorgeously-flowered genus, not very numerous, of southern and Central American epiphytes. All are pseudo-bulbous, the leaves broad, membranous, and plaited, and with pendulous clusters of not very many, but extremely remarkable spotted blossoms, the lip so singular as to require special names for its three portions. The cavity or recess at the base, studded with little tubercles, has been aptly compared to a grotto, lined and glittering with coloured spar. In cultivation it is absolutely necessary to keep these plants in suspended baskets; from the under-side of which then crawl out the strange and grinning flowers. The odour is so powerful as sometimes to become displeasing. A *Stanhopea* was one of the two or three orchids observed by Hernandez, who, on p. 266, gives a rude wood-cut of the plant, under the name of the Lynx-flower.

353. *S. oculata* [b]. Mexico, 1829. Leaves, including the petioles, exceeding 2 feet in length. Flowers in racemes of five or six, 4 or 5 inches across, the surface of a singular waxy and delicate softness, the petals and the base of the lip wonderfully ornamented with rich purple spots on a ground of lemon or bright yellow. The most interesting, perhaps, of this splendid genus. July—Sept. 7s. 6d., 10s. 6d.

Bot. Mag. 88, 5300; Bot. Reg. 21, 1800.

354. *S. tigrina* [b]. Mexico. Flowers large and very handsome, occasionally 7 or 8 inches across, and by some considered the finest of all, in colour varying from orange-yellow to creamy, with chocolate bars and stripes; odour resembling a mixture of melon and vanilla. One of the easiest to cultivate. July—Sept. 10s. 6d.

Bot. Mag. 71, 4197; Bateman, Mex. and Guat. pl. 7; Bot. Reg. 1839, pl. 1.

THUNIA.

A genus of handsome deciduous Indian ground-orchids, consisting of only one or two species, which were originally referred to *Phaius*.

The stems are erect, fasciculated, terete, leafy from the base upwards, and 2—3 feet high, producing, near their summits, imbricated and nodding racemes of large flowers.

355. *T. alba* [*a b*]. Nepal and Sylhet, 1837. Leaves oblong-lanceolate, and strongly ribbed. Flowers white, the lip crested, and charmingly pencilled with rose. One of the most queenly plants of those opulent Indian fields, capable of producing a dozen racemes at once, and furnishing a fine contrast to most other orchids. May—August; four weeks. 10s. 6d., 21s.

Wallich, 2, 198; Paxt. Mag. of Bot. 5, 125; Bot. Reg. 1838, pl. 33; Bot. Mag. 69, 3991 (all as *Phaius albus*).

356. *T. Bensoniæ* [*a b*]. Moulmein and Arracan, upon the mountains. More robust than the *alba*, not so tall, and the bloom much handsomer. The habit and foliage similar; the flowers lilac-purple, and the lip striped with yellow. Easy of culture, and a very desirable orchid for late summer. 31s. 6d., 42s.

Bot. Mag. 94, 5694.

TRICHOPILIA.

Very beautiful ground and sub-epiphytic evergreen dwarf orchids of tropical America and the West Indian Islands, in some respects related to the Maxillarias. The species, which are not numerous, have curiously-sheathed pseudo-bulbs, producing each a solitary leaf, but so densely clustered are the pseudo-bulbs, that the foliage forms a fine circular tuft, the beauty of which is increased by its somewhat drooping character. The peduncles emerge from the base of the pseudo-bulbs, and in most of the species bear two or three large and handsome flowers, the general effect of which, in well-grown plants, is that of a continuous and semi-pendulous frill around the base. Individually the flowers are of very peculiar figure and colouring; the sepals and petals 2—3 inches long, often twisted and spreading widely, and the quaint and splendid lip very conspicuous. Excellent plants for baskets.

357. *T. coccinea* [*b*]. New Granada. Leaves plane and lanceolate. Sepals and petals once twisted, pale green, with purplish shading, and a light margin; the lip purplish-rose or plum-coloured, with veins elegantly radiating into the broad, white, and recurved margin. May, June; two to three weeks. 21s.

Gardeners' Mag. of Bot. 3, 185; Paxt. Fl. Gard. 2, 54. [The Bot. Mag. *coccinea* (81, 4857) is *T. crispa*.]

358. *T. crispa* [*b*]. Costa Rica, upon trees overhanging streams of water. Pseudo-bulbs thicker and shorter than those of *coccinea*. Peduncles two to three-flowered; the sepals and petals linear-lanceolate, wavy at the margin, but not twisted, rich port-wine colour,

sometimes edged with white. Lip crispy, deeply lobed, within rich rosy-crimson, but white externally. May, June; two to three weeks. 63s. to 84s.

Bot. Mag. 81, 4857 (as *T. coccinea*); Bateman, Second Cent. pl. 115; Warner, pl. 5 (var. *marginata*).

359. *T. Galeottiana* [b]. Mexico. Pseudo-bulbs terete and stem-like. Flowers white or straw-colour, very large, the sepals and petals not twisted; the lip light pink, with infusion of yellow, and margined with white. 15s.

***T. marginata*.** Henfrey's name for the *T. coccinea*.

360. *T. suavis* [b]. Costa Rica. Pseudo-bulbs short, broad, and thin. Leaves broad and undulated. Flowers in nodding racemes of three each; when well-grown, fully 5 inches across, delicate in texture, the sepals and petals not twisted, and nearly white. Lip very large, convolute, thin, wavy, crisp, the ground white, but richly spotted with clear rose, which is capable of improving into bright crimson. Hawthorn-scented, and of very easy cultivation, requiring only to be treated like the *Lycaste Skinneri*. March, April; two to three weeks. 15s., 21s.

Bot. Mag. 78, 4654; Bateman, Second Cent. pl. 143; Paxt. Fl. Gard. 1, 11.

361. *T. tortilis* [b]. Mexico, 1835. Pseudo-bulbs narrow and compressed. Leaf plane and lanceolate. Sepals and petals linear-lanceolate, 2 inches long, spirally twisted, crisped along the margin, brick-red along the centre, the edges yellow or greenish. Lip nearly the same length, the limb widely expanded, white, irregularly red-spotted inside, the lower portion curiously rolled round the column. A beautiful plant, of the simplest culture. Jan.—June; two or three weeks. 10s. 6d.

Bot. Reg. 22, 1863.

UROPEDIUM.

A genus constituted of a solitary and unique species, the most singular of ground-orchids, with the habit, exactly, of some of the *Cypripediums*, and the flowers in most respects similarly formed.

362. *U. Lindenii* [b]. New Granada, in woods, at an altitude of 8500 feet, and where the mean temperature is 56°. Introduced about 1848. Leaves a foot long, thick, fleshy, and shining. Scape 6—9 inches high, bearing a solitary flower, which resembles that of a *Cypripede*, except in the labellum. Sepals ovate-lanceolate, 4 inches long, yellowish, veined with green. Petals and labellum linear-lanceolate, the colour of wine-lees, except at the very velvety base, where they are green and white, *eighteen inches long*, or twice the length of all the rest of the plant, and hanging down like thin

and unkempt locks. First bloomed in Europe with M. Pescatore, in the spring of 1853. April, May; three weeks. A rare curiosity. 63s.

Some of the first plants offered for sale in this country fetched up to £9 each.

VANDA.

A magnificent genus of truly oriental evergreen epiphytes, consisting of upwards of a score of species, scarcely rivalled in stateliness and in richness of bloom, and including some of the largest of the Old World representatives of the orchideous family. The stems are erect; the leaves distichous, varying in length from a few inches to nearly 2 feet, oblique at the point, and on the whole resembling those of the best forms of *Aërides*. The flowers are frequently very large, and often endowed with a generous and aromatic odour, that seems in nice harmony with the natural grandeur of the plants. They are produced in lateral racemes or panicles, which in some kinds are pendulous, in others erect.

363. *V. cærulea* [a]. India, upon the Khasya hills, at an elevation of 2500 feet, growing upon trees of Gordonia, among oaks in pleasant woods which remind the traveller of England. Leaves 5 inches long. Flowers in erect panicles of nine to eighteen, individually a foot in circumference, and of a uniform rich and tender lilac or lavender-blue, with the texture of a *Phalenopsis*. Lip, as usual with Vandas, small, or barely three-quarters of an inch long. This glorious plant is probably the finest of the Indian orchids. Sept., Oct.; eight weeks. 21s. to 105s.

Warner, pl. 18; Paxt. Fl. Gard. 1, 36; Moore, pl. 34.

364. *V. cristata* [a]. Nepal. Flowers large and greenish, the lip very remarkable, broad, buff-coloured, with purple streaks, the extremity in two narrow and horizontally diverging lobes. March—July; eight weeks. 42s. to 84s.

Bot. Reg. 1842, pl. 48; Bot. Mag. 73, 4304; Moore, pl. 35.

365. *V. Denisoniana* [a]. Arracan mountains, growing upon trees in sheltered places. Stems short. Racemes five to six-flowered, the blossoms 2 inches across, *pure white*, or lightly tinged with green, except a few orange markings at the base of the lip. 105s.

Bot. Mag. 95, 5811.

366. *V. gigantea* [a]. Moulmein, Rangoon, and other parts of the Burmese Empire, growing plentifully in the jungles. Leaves very long and broad, giving the plant a remarkably massive ap-

pearance. Flowers in handsome racemes, deep yellow, with cinnamon-brown blotches. March, April; three weeks. One of the most majestic of the Vandas. 10s. 6d., 21s., 42s.

Bot. Mag. 86, 5189; Bateman, Second Cent. pl. 142.

367. *V. insignis* [a]. Java and the Moluccas, 1846. A most remarkable and very handsome species. Racemes pendulous, shorter than the leaves, which extend about 10 inches. Flowers $2\frac{1}{2}$ inches across, the exterior green, the face bright glossy ochraceous brown, and blotched with chocolate. Labellum an inch across, purple or lilac-pink, white at the base, concave, the lateral lobes small, the broad central lobe deeply cordate. Young plants of only 9—12 inches high will produce clusters of 5—7 flowers, the bloom lasting a long time, and evolving an agreeable and tender fragrance. Jan.—Dec.; five to eight weeks. (A form of the *V. tricolor* is often sold under the name of this far superior plant). 31s. 6d. to 63s.

Bot. Mag. 95, 5759; Warner, pl. 3.

368. *V. Roxburghii* [a]. East Indies, in many parts, chiefly upon mango trees. Flowers large, either chequered or concolorous, varying much in colour, the lip bright purple. June; six weeks. 42s.

Bot. Reg. 6, 506; Bot. Mag. 48, 2245; and 62, 3416 (var. *unicolor*).

369. *V. suavis* [a]. Peduncles curiously divaricated. Flowers large, white, with reddish-brown marbling and spotting. Lip deep violet, tipped with white. The sepals and petals are remarkably bent backwards, at an angle of about 120° , and the latter so twisted as to show a considerable portion of the under-surface. Deliciously fragrant. Jan.—Dec.; six to eight weeks. 63s. to 210s.

Bot. Mag. 86, 5174; Bateman, Second Cent. pl. 125.

370. *V. teres* [a]. Sylhet, Martaban, and Burmah, in the hot damp jungles, where it scrambles up the trunks of trees. Introduced 1828. Stems and leaves wiry and rush-like, or resembling long green quills; the plant, under cultivation, growing six feet high, the mass a yard in diameter. Racemes erect, three to four-flowered, the blossoms individually exceeding four inches across from tip to tip, inexpressibly delicate in texture and soft in colour, the deep purple of the petals gradually melting into the pure white of the sepals, the lip in exquisite contrast of rich crimson and yellow. May, June; four to six weeks. 21s., 42s.

Bot. Reg. 21, 1809; Paxt. Mag. of Bot. 5, 193; Bot. Mag. 70, 4014.

371. *Vanda teres Andersoniana* [a]. A very fine and free-flowering variety. 84s., 105s.

372. *V. tricolor* [a]. Java, 1846. Habit of the *V. suavis*, and with similar inflorescence, but the white flowers are larger, the sepals yellow and brown-spotted, and the convex and rose-coloured lip has

rounded instead of acute lateral lobes. (This plant, or one of its varieties, is often sold under the name of *suavis*). Blooms at various seasons, and lasts a long time. 31s. 6d., 63s. to 210s.

Bot. Mag. 75, 4432; Paxt. Fl. Gard. 2, 42.

WARREA.

Tropical American ground-orchids of robust habit. Pseudo-bulbs small or wanting. Leaves erect, narrow, and strongly-veined. Flowers showy, racemose, and in figure nearly regular.

373. *W. tricolor* [δ]. Brazil. Pseudo-bulbs slender, conical, and ending in 3 or 4 ensiform leaves 12—18 inches long. Scape from the base of the pseudo-bulb, 2 feet high, erect, and bearing many large sub-globular flowers; the sepals and petals white or yellowish, the lip purple in the centre, the other portions yellow and pallid. Lasts in beauty a long time, and may be grown well in company with Allamandas, Ixoras, and similar plants. 21s., 31s. 6d.

WARSCEWICZELLA.

A small genus very nearly resembling *Warrea*, and indigenous to the same countries. Destitute of pseudo-bulbs. Leaves linear or linear-lanceolate. Flowers large and showy, and solitary upon the scapes.

374. *W. discolor* [α]. Costa Rica. Flowers about 2½ inches across, pale lemon colour, tinged with purple. Lip dull purple. Somewhat resembling a *Lycaste*. 31s. 6d.

Bot. Mag. 81, 4830 (as *Warrea discolor*).

375. *W. velata* [α δ]. New Granada. Leaves in tufts of about five, each tuft usually accompanying four single-flowered peduncles; the blossoms opening in succession. Sepals and petals an inch long, yellowish-white, and curved backwards. Lip very large and expanded, same colour, but with a crimson margin, and some deep purple streaks. 42s. to 63s.

Also called *Huntleya velata*.

Bot. Mag. 92, 5582.

ZYGOPETALON.

Showy ground and sub-epiphytic orchids from tropical America constituting a considerable genus, and remarkable alike for the cohesion of the bases of the petals, and for the very curious structure of the anther. Rhizomes creeping, at intervals emitting fascicles of

large and plaited leaves, and stems which are usually thickened below into ovoid pseudo-bulbs; the flowers not numerous, but large, and borne in loose and erect racemes.

376. *Z. cerinum* [a b]. No pseudo-bulbs. Leaves about a foot long, in tufts of four or five. Flower-scape very strong, 2—6 inches high, and bearing a solitary straw-coloured blossom three inches across; the lip yellow, with a curious, semicircular, and plaited ruff. Column purple. Also called *Pescatorea cerina*. April; sixteen sometimes open at once. 42s.

Bot. Mag. 92, 5598; Bateman, Second Cent. pl. 183 (both as *Huntleya cerina*). Flore des Serres, 17, 1815.

377. *Z. crinitum* [b]. Brazil. Leaves broadly lanceolate. Bracts cucullate. Sepals and petals linear-lanceolate, very acute, the lip obovate, narrowing towards the base, the veins upon it pink, blue, or almost colourless.

Bot. Mag. 62, 3402 (as *Z. Mackaii* β. *crinitum*.)

378. *Z. crinitum cæruleum* [b]. Flower-stems erect, one or two from the same pseudo-bulb. Sepals and petals green, barred with brown. Lip creamy white, streaked with violet-blue. Winter; lasting several weeks. 10s. 6d., 21s.

379. *Z. Mackayi* [b]. Brazil, about 1827. Stems 1—2 feet high. Flowers greenish-yellow, striped with blue, fragrant, perfuming the house in which the plant is kept, and produced abundantly in winter. Very useful for bouquets and ornamental purposes, the texture being durable. 10s. 6d., 21s.

Bot. Mag. 54, 2748; Paxt. Mag. of Bot. 3, 97; Bot. Reg. 18, 1433 (as *Eulophia Mackaiana*).

380. *Z. maxillare* [b]. Brazil, upon the Organ Mountains, where it inhabits the stems of tree-ferns, the rhizome running to the length of six feet. Introduced 1829. Scapes erect and flexuose, 12 inches high, and bearing three to eight large and very handsome flowers: the spreading sepals and petals green, with transverse brown blotches; the large broad convex lip of a very remarkable rich deep purple-blue, with darker streaks. Blooms freely, and when well-grown is extremely beautiful. Does well either upon a log or in a basket, but to succeed perfectly should be allowed to form large tufts. 31s. 6d., 42s.

Bot. Mag. 65, 3686; Henslow's Botanist, pl. 111; Paxt. Mag. of Bot. 4, 271.

381. *Z. rostratum* [a b]. Demerara, 1827. Flowers 2 inches across, yellow, white, and pink, showy, produced in plenty, at various seasons, and lasting five or six weeks. 42s.

Bot. Mag. 55, 2819.

SIGNIFICATIONS OF THE NAMES APPLIED TO ORCHIDS.

BOTANICAL or scientific names have usually been given for some good reason. As a rule, they are intended to point out something remarkable or characteristic in the plant; and are no more than classical ways of stating facts identically the same in nature as those expressed in "blue-bell," "white-thorn," and "dandelion" or "*dent-de-lion*." To persons acquainted with Greek and Latin, their meaning is obvious; but as many lovers of orchids are unversed in those languages, we subjoin the interpretation of every classical name and epithet which occurs in the preceding pages, indicating the Greek ones by the letters *Gr.*

Many of the names bestowed upon orchids, as upon other plants, are of the kind, however, termed commemorative and complimentary: they are the names, that is to say, of persons who deserve our respect or admiration, converted into Latin by the addition of the necessary final letters, *Brassia*, for example, *Cattleya*, and *Broughtonia*. When it is the *specific name* of the plant that is so derived, the rule is that, if the name be that of the discoverer or introducer, it shall end in *æ* or *i*, as *Wrayæ*, or *Pierardi*. When, on the other hand, the name has been bestowed purely in compliment, it ends after the manner exemplified in *Morelianus*, *Schilleriana*, *Dalhousieanum*, the termination agreeing, like that of all other adjectives, with the gender of the generic name. But this rule, unhappily, is often disregarded, and the names have to be accepted as they stand. Whether a specific name shall end in *i* or in *ii* is perfectly optional. It rests upon our preferring to say, in pseudo-Latin, *Humboldtus* or *Humboldtius*, *Farmerus* or *Farmerius*, either being right. A similar freedom pertains to the accentuation of the names which end in a single *i*. That is to say, they may be pronounced either *Hook'eri* or *Hooke'ri*, *Far'meri* or *Farne'ri*. The ancients had no such names, and therefore there is no classical rule.

A few other names have been adopted from the vernacular of their native countries, *Vanda*, to wit; and, when necessary, have been Latinized, as in the case of *Angracum*. A few others again appear devoid of meaning.

The question is often asked, why cannot these glorious flowers have "English names"? In one point of view, to give them English names is impracticable; on the other hand, they are already possessed of English names! Appellations rhyming with daisy and buttercup, they never can possess. To attempt to bestow such appellations would prove a useless and thankless task—for no one would be willing to accept them; and in the presence of fuchsia and rhododendron, iris

and chrysanthemum, crocus and narcissus, and a thousand others of corresponding fabric (which are as thoroughly un-English as *Calanthe* and *Epidendrum*), would be simply absurd, since it would be to attempt to supply a want which no one really feels. The people who talk of lilies and roses, yet complain of *Calanthe* and *Lælia*, belong to the school of M. Jourdain, in Molière, who "had spoken prose all his life without knowing it," for in the former names they are quite as far from Saxon as in the latter—lily and rose and violet being themselves nothing more than Latin words with the endings slightly altered. Here and there, after the same manner, we may shorten a Latin orchideous name, saying *Dendrobe*, *Oncid*, and *Cypripede*, instead of *Dendrobium*, *Oncidium*, and *Cypripedium*; following, too, in that procedure, the plan recommended by Mr. Bentham with regard to the names of certain English wild-flowers; but there are many names which cannot be so abbreviated, without sacrifice of euphony, and these will be adopted by all sensible people without a murmur, just as a little while ago they accepted *fuchsia* and *rhododendron*, and the hundreds of similar names which have virtually become the English ones. A little time only is wanting, and *Calanthe* will slide into everyday-speech, just as "*polyanthus*" has done,—that is to say, with every one who cares to know what a *Calanthe* is, our own experience leading us to the belief that those who object to "Latin" names do not want to learn the English ones either.

The above argument of course places the matter upon its lowest platform. There is no need to point out anew that without scientific names there could not possibly be any reciprocal understanding, or any uniformity of action among florists and botanists, especially those residing in different countries, every geographical change implying a new set of vernacular terms. The exotic vernacular, were it adopted as a whole, would scarcely be an improvement upon the Latin, if we may judge from the Mexican names of the two orchids figured by Hernandez, as above mentioned; for instead of *Stanhopea*, we should have to say *Coatzonte Coxochitl*; and instead of *Lælia majalis* (ye gods of Montezuma!), *Chichilitic Tepetlavhxochoitl*! The curious in orchid-archæology may consult this volume in the Chetham (Free) Library, Manchester.

The bestowal of the names of the genera of orchids we owe to many different writers, from Tournefort onwards. Ordinarily the genus has been defined by the contriver of the name it bears, but to this there are exceptions. What share the botanists who have dealt with orchids have had in establishing the genera the names of which appear in this Catalogue, may be judged from the following summary:—

Tournefort.—*Limodorum*, *Orchis* (from the ancients).

Bergius.—*Disa*.

Linnaus.—*Cypripedium*, *Epidendrum*.

Swartz.—*Cymbidium*, *Dendrobium*, *Oncidium*.

Ruis and Pavon.—*Anguloa*, *Bletia*, *Maxillaria*, *Rodriguezia*, *Sobralia*.

Lourcivo.—*Aërides*, *Phaius*, *Renanthera*.

Humboldt, Bonpland and Kunth.—*Cyrtorchilum*, *Ionopsis*, *Odontoglossum*.

D. Don.—*Pleione*.

Ad. Brongniart.—*Houlletia*.

La Llave.—*Arpophyllum*.

Blume.—*Anæctochilus*, *Dendrochilum*, *Limatodes*, *Macodes*, *Phalænopsis*.

Knowles and Westcott.—Barkeria.

Du Petit Thouars.—Angræcum (the original in Rumphius).

L. C. Richard.—Physurus.

Robert Brown.—Brassia, Broughtonia, Calanthe, Eulophia, Goodyera, Vanda.

Hooker.—Peristeria, Stanhopea, Zygopetalon.

Lindley.—Acineta, Ada, Ansellia, Brasavola, Burlingtonia, Camarotis, Cattleya, Chysis, Clowesia, Coelogyne, Galeandra, Huntleya, Lælia, Leptotes, Lycaste, Miltonia, Paphinia, Saccolabium, Sophronitis, Trichopilia, Uropedium, Warrea.

Reichenbach fil.—Pescatorea, Preptanthe, Selenipedium, Thunia, Warscewiczella.

ACINÉ'TA. (Gr.) Literally "immoveable," referring to the remarkable union of the base of the labellum to the column.

ACLAN'DLÆ. In compliment to the late Lady Acland (wife of Sir Thos. D. Acland, Bart.), of Killerton, near Exeter, by whom the Cattleya so named was introduced from Brazil.

ACUMINATE.

ACUMINATUS-A-UM. } Drawn out into a long and tapering point.

A'DA —? Probably in compliment to some lady. So named by Dr. Lindley.

ADUNC'US-A-UM. Hooked.

ÆMULUS-A-UM. Rivalling, emulous, aspiring.

ÆRIAL plants are such as grow upon others, as opposed to having their roots in the earth, or being aquatic.

ÆR'IDES. (Gr.) One of the earliest names given to epiphytic orchids, signifying "air-plant," and intended to express their seeming nourishment by the atmosphere alone.

AFF'NIS-E. Literally "related to," but used in the sense of doubtful or ambiguous.

AGGREGA'TUS-A-UM. When many parts, such as flowers or fruits, are placed side by side in such a way that not one can be removed without impairing the symmetry of the mass.

AL'BIDUS-A-UM. Whitish.

ALBO-SANGUIN'EUS-A-UM. Whitish blood-colour, or a combination of these two colours.

AL'BUS-A-UM. Clear, but not shining, white, like that of a snowdrop.

ALEXAN'DRÆ. In compliment to her Royal Highness the Princess Alexandra.

ALPINE. Growing upon mountains in cold countries. Gardeners often extend the term to any little plants of delicate and mossy aspect, whatever their native habitat.

AMAB'ILIS-E. Loveable; lovely.

AMETHYSTI'NUS-A-UM. Pale violet.

AMETHYSTOGLOSS'US-A-UM. (Gr.) Having the lip amethyst-coloured.

AMIC'TUS-A-UM. Frilled.

AMPLIA'TUS-A-UM. Enlarged.

AMPULLA'CEUS-A-UM. Flask- or bottle-shaped.

AN'CEPS. Two-edged.

ANDERSO'NLÆ. Complimentary to several of the name, like *Andersonia* among

the Epacrids, and especially to the late distinguished Dr. Thomas Anderson, Superintendent of the Calcutta Botanic Garden. Ob. Oct. 26 1870.

ANGRÆ'CUM. Rumphius, when he went to Amboyna, nearly two centuries ago, found the Malayan name for an epiphytic orchid of any kind to be *angrec*. This word he Latinized, and employed in the *Herbarium Amboinense* for the dozen different species which he describes and figures.

ANGULO'A. So named by Ruiz and Pavon, in compliment to Don Francis de Angulo, Director of the Spanish mines in Peru, and a great patron of botany.

ANNUAL. Produced from a seed, a bud, or a root, flowering and dying within a year.

ANÆCTOCHILUS. (Gr.) Open-lipped.

ANOS'MUS-A-UM. (Gr.) Scentless.

ANSEL'LIA. Commemorates the late Mr. John Ansell, who, during a botanical visit to Nigritia, discovered the plant which bears his name.

ANTHER. The terminal and hollow portion of the stamen, usually a distinct case or little box; and usually of two cells or compartments, each containing pollen.

APHYLLUS-A-UM. [Gr.] Leafless. Sometimes erroneously applied to stems, when the leaves of the plant are all radical. Properly signifies wholly destitute at all times, of true leaves; the condition of many exotic orchids, especially terrestrial ones, and of a few European species. Some of the tropical species compensate the want of foliage in their very long, thin, flat, and tape-like stems and branches, which bind round the bark of the trees in every direction. Such are the Indian *Aërides taniale* and *Chiloschistis usneoides*, and several of the genus *Angracum*.

ARACHNITES. (Gr.) In the mythology of ancient Greece, Arachne was skilful above all other women in the art of embroidery with the needle. After her death she was transformed by Minerva into a spider, so that she might continue to exercise her ingenuity though in another way. The body of the creature is supposed to have some sort of resemblance borne to it in the flowers of the *Aërides a.*, and of one or two species of *Ophrys*.

ARGEN'TEUS-A-UM. Silvery.

ARPOPHYL'LUM. (Gr.) Sickle-leaved.

ARTICULATED. Jointed to some other part, and capable of readily separating from it without tearing, so as to leave a clean scar. The petals, for example, of roses and camellias, and the leaves of exogenous trees.

ASPERA'TUS-A-UM. Roughened.

ATRO-RU'BENS. Deep reddish.

AURANTI'ACUS-A-UM. Orange-coloured.

AUREO-FLA'VUS-A-UM. Golden-yellow.

AU'REUS-A-UM.

AURO'SUS-A-UM. } Gold-coloured.

AUTUMNA'LIS-E. Flowering in autumn.

AXIL. The cavity or angle between the stem and the inner base of the leaf or petiole. Flowers, &c., arising from this point are "axillary."

BARBATUS-A-UM. Bearded, *i. e.*, provided or beset with long weak hairs, or terminating in a mass of hairs, usually more or less straight and parallel. The negative expressed by *imberbis*.

BARKE'RI. } In compliment to the late George Barker, Esq., Springfield,

BARKE'RIA. } Birmingham, a celebrated orchid-grower. After his decease,

which took place in 1845, the collection became the property of J. J. Blandy, Esq., Reading. In addition to the genus, seven or eight species and varieties of orchids have been named after Mr. Barker.

BENSO'NIÆ. In compliment to Lieutenant Colonel Benson, of Rangoon, whose indefatigable exertions in Burmah have enriched our gardens with so many fine species. One or two of them are so named in compliment to *Mrs.* Benson.

BI'COLOR. Two-coloured.

BICTONIEN'SIS-E. Refers to Bicton, the well-known seat of Lord Rolle, near Sidmouth.

BIENNIAL PLANTS. Such as spring from the seed in *one* year, blossom in the *following* year, and then die; thus requiring two summers for the full run of their life.

BIFO'LIUS-A-UM. Having two leaves, neither more nor less. Many examples occur among orchids, as in the English tway-blades, *Listera ovata* and *Listera cordata*.

BIGIB'BUS-A-UM. To be "gibbous" is to have small protuberances. The *Dendrobium* so called possesses a kind of double chin.

BIPARTITE. Cleft nearly to the base, so that a part or organ in reality single, is nearly halved. Quite a superfluous, though very commonly-used term, since the condition in question is already expressed in the simple word "partite."

BLU'MEIL. In compliment to the celebrated Dr. Blume, whose researches in the East Indies have done so much for Botany.

BLUNT'IL. Commemorates the services rendered to Botany by the late Mr. Blunt, who, during the years 1862—1864, collected plants in Brazil and New Granada for Messrs. Hugh Low & Co., Clapton.

BRACTES'CENS. Having very large bracts, or indicating a strong tendency to the development of bracts.

BRACTS. Leaves much diminished in size, and more or less altered in form, usually standing very near to the flowers or their peduncles; often petaloid and gaily-coloured. In orchids they are never absent, though occasionally deciduous, and sometimes add greatly to the beauty of the inflorescence, as in the Evelynas and the brilliant crimson *Stenorrhynchus speciosus*.

BRASAVO'LA. In honour of Antonio Musa Brasavolus (Brunet) or Brassavolus (Biog. Universelle), a noble Venetian, and one of the most enlightened botanists of his day. About 330 years ago he published "Annotations upon the Aphorisms of Hippocrates."

BRASS'IA. So named by Robert Brown, in commemoration of the labours of Mr. Brass, a skilful botanist, who, in 1790 and following years, collected plants in Africa for Sir Joseph Banks.

BROCKLEHURSTIA'NUS-A-UM. In compliment to the late Thomas Brocklehurst, Esq., The Fence, near Macclesfield, a distinguished orchid-amateur, whose contributions gave brilliancy to the Manchester Flower-shows as far back as 1845. The collection was disposed of about 1863. Obiit Nov. 7, 1870.

BROOK'EL. In compliment to the late Sir Richard Brooke, Bart., Norton Priory, near Runcorn. Obiit Nov. 11, 1865.

BROUGHTO'NIA. Commemorates Mr. Arthur Broughton, a botanist, who at the close of the last century employed himself usefully in Jamaica.

BRYSLA'NA. In compliment to the well-known Belgian botanist, M. Brys, by whom the *Lælia purpurata* was introduced into Europe.

BULBO'SUS-A-UM. Properly signifies having a bulb like that of a hyacinth. Applied sometimes to abnormal stems of similar shape.

BULLE'NI. In compliment to Mr. R. Bullen, for many years one of the foremen in the great establishment of Messrs. Hugh Low and Sons, Clapton.

BURLINGTO'NIA. So named by Lindley, on New Year's Day, 1837, in compliment to Blanche Georgiana, Countess of Burlington, who, had she lived, would now have been Duchess of Devonshire. Ob. April 27, 1840.

CÆRULE'CENS. Having a tendency to blue, as in the flowers of *Dendrobium c.*

CÆRU'LEUS-A-UM. Pale indigo-blue.

CALAN'THE. (Gr.) Lovely flower.

CALCEOLA'RIA. The corolla of this well-known flower is very closely imitated in the lip of the *Dendrobium* so called.

CALCE'OLUS. A little shoe, or slipper, or sandal, the full-sized one by the ancient Romans being called *calceus*.

CALYX. (Gr.) The outermost of the two sets of leafy pieces which constitute a perfect flower or "perianth," the corolla (constituted of petals) being interior to it. When the constituent pieces or sepals are separate, it is better to call them by their own name than to say "calyx," the proper signification of which latter word is "cup," or as elegantly rendered in another spelling, "chalice."

CAMARO'TIS. (Gr.) "Chambered-flower," in reference to the form of the lip.

CAMBRIDGEA'NUS-A-UM. In compliment to Augusta-Louisa, first Duchess of Cambridge, who, with the Duke, was upon a visit at Chatsworth, in 1838, when this *Dendrobe* first flowered.

CAN'DIDUS-A-UM. Pure and lustrous white, like that of satin.

CATT'LEYA. In honour of the late Wm. Cattley, Esq., of Barnet, Hertfordshire, a celebrated cultivator of orchids, one of the earliest amateur-growers, and with whom the *Cattleya labiata* produced its first English flowers. His collection was dispersed about 1832.

CAUDA'TUS-A-UM. Having long tails.

CAUDICLE, CAUDICULUS. Literally "a little tail." Specially applied to the minute stalks or processes which sustain the pollen-masses of orchideous flowers.

CAULESCENT. Possessed of a more or less obvious stem. Properly speaking, there is no such thing as an absolutely *stemless* plant, though certain orchids are familiarly spoken of as being so. Whatever intervenes between the crown of the root, and the bases of the leaves and flower-stalks, short, small, and rudimentary as it may be, is the representative, as far as it goes, of the organ usually so distinct, and capable of becoming so lofty.

CAVENDISH'II. In compliment to Wm. Spencer Cavendish, sixth Duke of Devonshire, the noble constructor of Chatsworth, in regard to its Botany, and renowned for his princely encouragement of first-class floriculture. Ob. Jan. 17, 1858.

CEBOLLE'TA. The leaves of the oncid so called resemble those of the chive (*Allium Schœnoprassum*), the French name of which is *ciboullete*.

CERI'NUS-A-UM. Wax-coloured.

CER'NUUS-A-UM. Somewhat pendulous.

CERVANTE'SII. Bestowed by La Llave upon the odontoglot so called, in compliment to the Spanish botanist, Vincente Cervantes.

CHLORAN'THUS-A-UM. (Gr.) Green-flowered; an epithet more frequently required for orchids than for any other class of flowering-plants. For although the most exquisite shades of green occur among the lilies and the amaryllids (in the petals of the snowdrop for example), also in certain Ericas, solanaceous plants and others, it is reserved for the orchids to be green-flowered most frequently and most variously. The English Listeras and the Zygopetalons supply remarkable examples.

CHRYSAN'THUS-A-UM. (Gr.) Golden-flowered.

CHRYSO'TIS. (Gr.) Golden-eared.

CHRYSOTOX'US-A-UM. (Gr.) Golden-arched; the lip of the Dendrobe so called having a beautiful golden semi-circular rim.

CHY'SIS. (Gr.) Anything melted: the pollinia seeming to be fused together.

CILIATED.

CILIA'TUS-A-UM. } Minutely and very delicately fringed.

CINNABARI'NUS-A-UM. Vermilion-coloured.

CITRI'NUS-A-UM. Lemon-coloured.

CITROS'MUS-A-UM. (Gr.) Citron-scented.

CLAVA'TUS-A-UM. Club-shaped; *i. e.* solid, cylindrical, slender at the base, and gradually thickening upwards. In *Dendrobium c.* this is somewhat the form of the raceme.

CLOWES'II. Worthily preserves the name of the late Rev. John Clowes, of Broughton Hall, Manchester, Fellow of the "Old Church," now the "Cathedral." Ob. Sept. 28, 1846, bequeathing his magnificent collection of orchids to Kew Gardens.

COCCIN'EUS-A-UM. Bright scarlet.

CÆLOG'YNE. (Gr.) Literally "hollow-stigma," in reference to the cavity in the column.

COLUMN. The composition of this part of an orchid-flower was stated on p. 13. External evidence of its nature is supplied by the frequent occurrence upon it of two little teeth, as in *Burlingtonia fragrans*, or of two large ears, as in *B. rigida*, which, in either case, are anthers in a rudimentary condition. There are examples, again, of the filaments, or one of them, being free, or nearly so, as in the Japanese *Eucoxia carnea*, and in the genera *Zygostates* and *Euphroboscas*;—a condition occasionally illustrated in "monstrous" states of familiar European species. An approach to the structure of the orchideous column occurs in the Aristolochia family.

CON'COLOR. Properly signifies agreeing in colour with some other and different thing, as when Ovid says that the colour of the flower into which Adonis was changed, was *concolor* with his blood. As employed in Botany, it denotes uniformity of hue in the sepals and petals.

CONNIVENT. Drawing together, so as to form an arch.

CORDATE.

CORDA'TUS-A-UM. } Shaped like the "heart" upon playing-cards.

CORNU-CER'VI. Literally "stag's horn." The flowering-branch of the Phalæ-

DIXAN'THUS-A-UM. (Gr.) Having flowers of two shades of yellow.

DORSAL. Behind, or at the back of anything.

DOWIA'NUS-A-UM. In compliment to Capt. J. M. Dow, of the American Packet-service, a gallant officer, and great friend to naturalists who visit the western coasts of the Pacific.

EBUR'NEUS-A-UM. Ivory-like.

ELA'TUS-A-UM. Tall; *i. e.* taller than the parts or organs of the plant would lead us to expect; or tall in comparison with its near allies.

EL-DORA'DO. The famous though fabulous country described by Francis Orellana, companion of Pizarro, when the imagination of Spain saw nothing beyond the Atlantic excepting gold, "el-dorado" signifying literally the golden or gilded. Well applied to that splendid *Cattleya* the lip of which seems to hold a plate of the burnished metal.

EL'EGANS. Very choice and attractive: worthy of being chosen.

EMARGINATE. Having a little notch in the rounded extremity. Said of certain leaves.

ENSIFORM. Sword-shaped.

EPIDEN'DRUM. (Gr.) Literally "upon a tree," referring, like *Dendrobium*, to the habitat. This name should of course follow the rule observed in *Rhododendron*, *Clerodendron*, *Leucadendron*, and all others of corresponding derivation, and be written *Epidendron*. Originally it was the generic name of nearly all the tree-orchids. Jacquin, for instance, in his American plants, applies it to every one of the twelve species he describes. (Plates 131—142, ed. 1763).

EQUES'TRIS-E. Knightly; courtly; very handsome.

EXONIEN'SIS-E. Raised at Exeter by the celebrated nurserymen, Messrs. Jas. Veitch & Sons.

FAIRRIEA'NUS-A-UM. In compliment to Mr. Fairrie, of Liverpool, once an amateur cultivator of orchids. The collection formed by him is now the property of Mr. R. Warner.

FALCONE'RI. In compliment, it would appear, to Dr. Hugh Falconer, distinguished for his researches in East Indian Botany and Palæontology. If Stone, Perrin, and Insleay deserved to have their names bestowed on orchids, so, however, would James Falconer, gardener to A. Palmer, Esq., Cheam, Surrey.

FAMILY OF PLANTS. The equivalent of "Natural Order," the "Orchis family" being the same as Orchids or Orchidaceæ. This happy term was originally contrived by the celebrated Pierre Magnol, Prefect, 200 years ago, of the Botanic Garden at Montpellier, and employed by him in his "Prodromus Historiæ Generalis Plantarum." He established 76 "families," but gives no detailed characters.

FAR'MERI. In compliment to the late W. G. Farmer, Esq., Nonsuch Park, Ewell, Surrey, a celebrated orchid-amateur.

FIELDING'II. In compliment to the late W. B. Fielding, Esq., Stodday Lodge, now called Lune Cliffe, Lancaster. Died Nov. 21, 1851.

FILIFOR'MIS. Very long, slender, and flexible.

FIMBRIA'TUS-A-UM. Fringed.

FLAVO-OCULA'TUS-A-UM. Yellow-eyed.

FLEXUO'SUS-A-UM. Slightly zigzag; applied to stems.

FLORA. The total of the species of plants indigenous to a given country or district. When for a very small area, a Flora within a Flora, the term *Florula* is employed. In the secondary sense, a book in which the vegetation of a county or province is described and classified.

FOLIACEOUS. Leaf-like in texture.

FORMO'SUS-A-UM. Consummately beautiful in shape, therefore strikingly ornamental.

FRA'GRANS. Sweet-scented.

FURFURA'CEUS-A-UM. Scurfy.

FUSCA'TUS-A-UM. Brownish-flowered.

FUSIFORM. Spindle-shaped.

FYTCHEA'NUS-A-UM. In compliment to Colonel Fytch, who, while in company with the Rev. C. S. Parish, was the first to observe the beautiful Dendrobe which bears his name.

GALEAN'DRA. (Gr.) Having the anther helmet-shaped.

GALEOTTIA'NUS-A-UM. Commemorates the successful enterprise of M. Galeotti, who travelled in Mexico, about 1839, collecting orchids for M. Vander Maelen. Co-author with M. Richard, of a well-known work upon orchids.

GARDNERIA'NUS-A-UM. In compliment to the distinguished botanical traveller, the late Mr. George Gardner, whose explorations in Brazil during 1836—1841, added so greatly to our knowledge of South American plants. Subsequently appointed Superintendent of the Botanic Garden at Peradenia, Ceylon, he resided in that island until his death, March 10, 1849.

GIBSO'NI. In compliment to Mr. John Gibson, who collected plants in the East Indies for the late Duke of Devonshire, and who contributed in no slight degree to render 1837 the *annus mirabilis* of orchid novelties in England, the number of new species introduced in that year having been not less than three hundred. Mr. Gibson's name is now familiar in connection with "sub-tropical gardening."

GIGAN'TEUS-A-UM. Greatly exceeding its congeners in size and stature.

GLABROUS. Smooth, and perfectly destitute of down or hair, like the palm of the hand.

GLAU'CUS-A-UM. Green, with the addition of a peculiar blueish-white, as in the foliage of carnations.

GLORIO'SUS-A-UM. Renowned, illustrious; when said of flowers, "very beautiful."

GLUMA'CEUS-A-UM. Chaffy in texture, or resembling an ear of corn, as in *Dendrochilum glumaceum*.

GOODYE'RA. Commemorates John Goodyer, an old Hampshire botanist mentioned in Gerarde's "Herbal," p. 228.

GRANDIFLO'RUS-A-UM. Having flowers large in comparison with the others of its genus.

GRANDIFO'LIOUS-A-UM. Having leaves larger than those of its congeners.

GRAN'DIS-E. Great, grand, imposing.

GRIFFITHIA'NUS-A-UM. In compliment to the late William Griffith, distinguished for his extensive and profound researches in East Indian Botany, and Superintendent of the Calcutta Garden, from 1841 onwards. Died at Penang, Feb. 7th, 1845.

GUTTA'TUS-A-UM. Spotted with colour, as if by falling drops.

HAD'WENI. In compliment to the late Isaac Hadwen, Esq., of Edge Lane, Liverpool, for many years well known as a cultivator of orchids.

HÆMARIA. (Gr.) Blood-coloured; in reference to the bracts and the under-surface of the leaves.

HALLI. Commemorates the discovery by Colonel Hall, of the *Odontoglossum* so named, in the valley of Lloa, near Chimborazo.

HARRISO'NIÆ. Commemorates the eminent Liverpool family, to three members of which, Mr. William Harrison (resident at Rio Janeiro), Mr. Richard Harrison, and Mrs. Arnold Harrison, the orchidology of Brazil, and the orchid cultivators of thirty years ago, are so profoundly indebted. Aigburth, Mr. Bateman tells us, was at that period the Mecca to which every good orchidologist failed not to make annual pilgrimage. Their plants have long since been dispersed,—Mr. Richard Harrison's by the hammer, in 1842.

HARRISONIA'NUS-A-UM. Applied to a beautiful *Saccolabium*, this name is complimentary to Mr. C. H. Harrison, of Singapore, an eminent orchid amateur.

HASTIF'ERUS-A-UM. Having some part or organ shaped like the head of a halbert or spear.

HASTILA'BIUS-A-UM. Spear-lipped.

HETEROCAR'PUS-A-UM. (Gr.) Having variable or various kinds of seed-pod.

HIRSUTIS'SIMUS-A-UM. Intensely hairy.

HOOKE'RÆ. So named by Reichenbach in compliment to Lady Hooker, widow of the late Sir W. J. Hooker, and the distinguished mother of Dr. J. D. Hooker, C.B., the present Director of Kew Gardens. Resides at Torquay.

HOULLE'TIA. Named by Brongniart in compliment to M. Houlllet, "jardinier-chef des Serres au Muséum de Paris," and the companion of Guillemin during his botanical explorations in Brazil.

HUMBOLDT'I. Connects the plant with the memory of the greatest botanical traveller and scientific naturalist of any age or any country.

HUNT'LEYA. In compliment to the Rev. John Thomas Huntley, formerly of Kimbolton, now of Burbrook, near Market Rasen, cotemporary as an orchid-cultivator with Mr. Cattley and the Liverpool Harrisons. His collection was incorporated, in 1835, with the Chatsworth one.

HYPNUM. (Gr.) The name of that very extensive genus of little green and usually sylvan plants to which the name of "moss" applies most commonly.

HYS'TRIX. "A porcupine." The crest of the lip of the *Odontoglossum Hystrix* presents, when magnified, and viewed sideways, a near resemblance to the "fretful" creature of the "quills."

IMBRICATED. So disposed that the edges overlap.

INFUNDIBULUM. A funnel.

INSIGNIS-E. Noble, admirable, conspicuous.

IONOP'SIS. (Gr.) Violet-faced, resembling a violet in shape.

INS'LEAYI. In compliment to Mr. T. Insleay, of Birmingham, formerly gardener to Mr. Barker, of Springfield.

INTERME'DIUS-A-UM. Half-way between two other things.

INTERNODES. The portions of stem which extend from joint to joint.

JENE'INSI. In compliment to the late Captain Jenkins, an Indian friend and correspondent of Dr. Wallich's.

KRA'MERI. The *Oncidium* so named refers us to the skill of an old orchid-grower, M. Kramer, now occupied with his favourite pursuit near Hamburgh. The *Odontoglossum Krameri* is named after his son, formerly a collector for Messrs. Veitch, and now living in Japan.

LABIA'TUS-A-UM. Large-lipped.

LADY'S SLIPPER. See *Cypripedium*.

LÆLIA. Caius Lælius was a noble Roman, B.C. 141. Lælia, the elder of his two daughters, was celebrated for the purity with which she spoke her native language, and which gave the tone to the conversation of the polished society of her age; it was equally distinguished for its sincerity and earnestness. The beautiful genus of orchids to which her pleasing name has been applied, similarly discloses the highest qualities of the order.

LÆVIGA'TUS-A-UM. Having a smooth and polished surface; applied to stems.

LÆVIS-E. Free from asperities, and any kind of unevenness. Applied to the *Chysis lævis* it denotes the character of the ridges upon the lip.

LAGENA'RIA. Flask or bottle-shaped, as are the pseudo-bulbs of the *Pleione Lagenaria*.

LAMELLÆ. Very small and thin vertical plates.

LANCEA'NUS-A-UM. In compliment to Mr. John Henry Lance, who, about forty years ago, brought numerous fine orchids from Surinam.

LANIPES. Having woolly stalks or peduncles.

LARPEN'TÆ. In compliment to Lady Larpen, wife of Sir George Larpen, Bart., Roehampton, Surrey.

LASIOGLOSS'US-A-UM. (Gr.) Literally woolly-tongued.

LATIFO'LIUS-A-UM. Broad-leaved, *i.e.*, in comparison with its immediate congeners.

LEOPOL'DI. In compliment to Leopold I., King of the Belgians, whose garden at Laeken was noted for its splendid orchids. Died December 10, 1865.

LEPTO'TES. (Gr.) Literally, "slender," given in reference to the leaves.

LEUCOCHIL'US-A-UM. (Gr.) White-lipped.

LIGULATE. Long and narrow, with parallel sides, like a piece of ribbon.

LIMATO'DES —?

LIMBA'TUS-A-UM. Having a distinct border of some other colour.

LIMMINGH'II. Commemorates the distinguished and unfortunate Belgian orchidologist, Count Alfred de Limminghe. Serving in the Pontifical army, he was wounded in the battle of Castelfidardo, and died at Rome, April, 1861.

LINAWIANUS-A-UM —?

LINDENI. In compliment to M. Linden, the celebrated horticulturist of Brussels, and now also of Ghent. M. Linden spent many years collecting plants in Mexico, the West Indies, New Granada, Peru, and Brazil.

LINDLEYA'NUS-A-UM. In compliment to the late Dr. Lindley (obit Nov. 1st, 1865). In connection with his enthusiastic love of orchids, it is well to remember that it was bestowed equally upon large-flowered and small-flowered, the former more grand to behold, but marvellous structure pertaining rather to the pigmies, as in *Oberonia* and *Bolbophyllum*. Of these *small-flowered* orchids the number is

in fact, very considerable. The descriptions given above, of the splendid appearance of orchideous plants, belong to those adapted for culture as ornamental objects. A very large portion of the order (as in all other extensive herbaceous families) is utterly insignificant as to effectiveness of blossom; while the plants themselves are diminutive, and uninteresting except for their produce.

LITUIFLO'RUS-A-UM. *Lituus*, with the ancient Romans, was the name of a slightly-curved trumpet or clarion used by the cavalry. The lip of the *Dendrobium lit.* is somewhat of the same figure.

LOBAT'US-A-UM. Having deep indentations.

LOBB. Commemorates Messrs. Veitch's indefatigable collector, Mr. Thomas Lobb (now resident in Cornwall), the most successful of all who in recent times have left the shores of England in search of plants. The principal places visited by him were India, the Bombay Presidency, the Neilgherry Hills, the Himalayahs, Assam, the Khasya Hills, Moulmein, Malacca, Borneo, Java, and the Philippines. His brother, Mr. Wm. Lobb, who collected for Messrs. Veitch, in America, died some years ago.

LODDIGESII. Commemorates the honoured names of "Conrad Loddiges and Sons," known for a long period as proprietors of one of the most famous nursery-gardens in the world—Hackney, near London. Mr. William Loddiges, the last of the original firm, died December 28, 1849. The business was continued by the nephews until September, 1852, when the Crystal Palace Company purchased a large portion of their stock. The matchless collection of orchids was disposed of during 1856. In 1843, their catalogue of these plants (of which Messrs. Loddiges were probably the first professional growers) included about 1800 names, and in 1844 it had risen to no less than 1916! What a contrast with A.D. 1815, when the Kew collection numbered only 25! Many of those 1916, no doubt, exist no longer in cultivation, partly because interesting only to botanists.

LOW. Commemorates the horticultural enterprise and well-deserved success of the distinguished firm known all over the world as Hugh Low and Sons, Clapton. Sometimes the name refers to Mr. Hugh Low himself, sometimes to his eldest son of the same name, resident for the last twenty-seven years in Borneo, whence he has sent home such admirable plants: in other cases, to one of the younger sons, Mr. Stuart H. Low.

LUDDEMANNIA'NUS-A-UM. In compliment to M. Lüddemann, once Director of the celebrated orchid-establishment of M. Pescatore, Celle-St.-Cloud, Paris.

LU'RIDUS-A-UM. Dismal-coloured, yellowish-brown.

LUTE'OLUS-A-UM. Pale yellow.

LUTEO-PURPU'REUS-A-UM. Yellowish-purple, or yellow and purple associated.

LYCAS'TE. The name of a celebrated beauty, perhaps mythological, who is said to have lived at Drepanum, in Sicily. Given to this genus because of its corresponding charms.

M'CAR'THIE. In compliment to Mrs. M'Carthy, wife of the Hon. C. J. M'Carthy, who in 1855 was Colonial Secretary in Ceylon, where this *Dendrobium* grows naturally.

MACKAY'I. In compliment to the late Mr. J. T. Mackay, of the Trinity College Botanic Garden, Dublin, the Nestor of Irish botanists. Ob. March 25, 1862.

MACO'DES — ?

MACRAN'THUS-A-UM. (Gr.) Broad or large-flowered.

MACROCHI'LUS-A-UM. (Gr.) Broad or large-lipped.

MACROPHYLL'US-A-UM. (Gr.) Broad or large-leaved.

MACULA'TUS-A-UM. } Spotted.

MACULO'SUS-A-UM. }

MAJA'LIS-E. Flowering in the month of May.

MAJOR. Larger than its congeners.

MAJUS. Large, compared with others of the same genus.

MARGINA'TUS-A-UM. When a flat surface has the edge of a different colour, so as to appear bordered.

MARMORA'TUS-A-UM. Marbled.

MASTERS'II. Named by Dr. Griffith, in recognition of the merits of a Mr. Masters, formerly one of the principal assistants in the Calcutta Botanic Garden.

MASCULUS-A-UM. Male or masculine. The ancients had a dim perception of the presence in plants of Sex, so clearly proved by modern science; and gave to many plants the epithets of "male" and "female," though in no case, it would seem, were they right according to modern views. The epithets in question were generally based upon some such feature as robustness, as contrasted with delicacy, rather than upon facts connected with the flowers. Many of the old names are retained, as in the Orchis *mascula*, Shakspere's "long-purples." Where, however, the prefix of "lady" occurs in the modern names of orchids, the sense is similar to that illustrated under *Cypripedium*.

MASU'CA — ?

MAUL'EI. In compliment to the well-known Bristol nurseryman and orchid-grower, Mr. William Maule.

MAXILLA'RIA. So named by the authors of the "Flora Peruviana," they inform us, because of a certain resemblance between the column and the lip of the flower, and the jaws or maxillæ of insects.

MAXILLA'RIS-E. Resembling jaws.

MAX'IMUS-A-UM. The largest of its genus or family.

MEMBRANA'CEUS-A-UM. Thin, dry, flexible, and semi-translucent.

MILTO'NIA. In compliment to Viscount Milton, Earl Fitzwilliam, of Wentworth House, Yorkshire, one of the first places in this country where the beauty of orchids was developed upon a large scale.

MONILIFOR'MIS-E. "Necklace-form," as illustrated in the contracted joints of the stems of *Dendrobium m.*

MORELIA'NUS-A-UM. In honour of M. Morel, of Paris.

MOS'SIÆ. In compliment to Mr. Thomas Moss, of Otterspool, Liverpool, who, forty years ago, was an assiduous orchid-grower.

MOSCHA'TUS-A-UM. Musk-scented.

MYRIAN'THUS-A-UM. (Gr.) Innumerable-flowered.

NÆVIUS-A-UM. Freckled.

NEBULO'SUS-A-UM. Clouded, *i.e.*, when in flowers a certain dingy hue pervades an otherwise bright one. Also employed to signify that the plant grows at so lofty an elevation as to be among the clouds.

NEMORA'LIS-E. Growing naturally in groves and sylvan places.

NIGER, NIGRA, NIGRUM. Black.

NIVA'LIS-E. Properly pertaining to winter or the time of snow ; but employed in the sense of snow-white.

NOB'ILIS-E. Eminent ; celebrated for fine qualities.

NODA'TUS-A-UM. Having many nodes or joints.

OBRYZA'TUS-A-UM. (Gr.) Having the colour of pure gold.

OCULA'TUS-A-UM. Literally "having eyes." In *Dendrobium o.* refers to the dark-brown, almost circular spot in the centre of the flower.

ODONTOGLOSS'UM. (Gr.) Literally "tooth-tongued," referring to the singular form of the labellum.

ODORA'TUS-A-UM. Sweet-scented.

ONCID'IUM. (Gr.) Refers to the tubercles or protuberances at the base of the lip.

ORCHID. (Gr.) This name has all the appearance of one of those which, like *Annelid*, are compounded of some other name, and the affix *id*, the affix denoting resemblance. But in truth, it is like *Berberid*,—the abbreviated form of a genitive, or rather, perhaps, of the full ordinal name "Orchidaceæ," founded upon that genitive, as *Berberid* from *Berberidaceæ*. Here, however, comes in a curious bit of word-history. Orchis, the name of the plant, has for its genitive, *orcheos*. "Orchidos" is the genitive of Orchis employed as the name of a kind of olive ! So that to be strictly correct, we ought to say, not *Orchida'ceæ*, but simply *Orchia'ceæ*. Euphony comes to the rescue, and extenuates the etymological error, and under the circumstances the word "orchid" may be taken to mean "a plant with flowers like those of an orchis."

ORCHIS, the name of the plant, is a very ancient metaphorical term, referring with the Greeks, to the fact of many of the species being provided with a pair of ovoid and pendulous tubers, which are storehouses of nutriment. This word, as above stated, in the genitive, gives *orcheos*. By extension of the metaphor, "orchis," with the ancients, denoted also a kind of olive, as in Virgil (*Georgics* 2, 86), and in this second usage only had for its genitive *orchidos*. Originally, every orchid was called an "orchis ;"—the name is now restricted to a definite group of terrestrial species.

ORNITHORHYNCH'US-A-UM. (Gr.) Resembling the beak of a bird.

OVATE. A flat surface, having the outline of the vertical section of an egg.

OVOID. A solid in the form of an egg.

PACHYPHYLL'US-A-UM. (Gr.) Thick-leaved.

PALL'IDUS-A-UM. Pale.

PALPEBRÆ. The eye-lashes.

PANDURA'TUS-A-UM. Shaped like a violin ; *i. e.*, obovate, with a deep recess upon each side, as in the lip of the *Cælogyne pandurata*.

PANICULA'TUS-A-UM. Branching irregularly, as many compound flower-stems do.

PAPHIN'IA. Perhaps founded upon *Paphia*, one of the surnames of Venus, and intended to denote the beauty of the plant.

PAPIL'IO. A butterfly.

PARASITES. Plants which subsist by the absorption of the juices of some other plant, on which they fix themselves, such as dodder and the mistletoe. Although

the tree-orchids furnish no known example, there appear to be several instances among the terrestrial species, both of Europe and the Antipodes, the plants resembling our English *Orobanches* alike in habit and dingy colours.

PARISH'II. In compliment to the Rev. C. S. P. Parish, M.A., of Moulmein, whose quick eye has made so many splendid discoveries, not only among the orchids of Burmah, but among the ferns of that fertile country.

PAXTO'NI. In compliment to the late eminent Sir Joseph Paxton. Ob. June 8th, 1865.

PERIANTH. (Gr.) The calyx and corolla, or sepals and petals, taken together.

PERISTE'RIA. (Gr.) Literally, a dove.

PERRIN'II. Applied to the *Brasavola* *P.* this name worthily preserves the memory of the gardener who, forty years ago, had charge of Mr. Harrison's orchids at Aigburth, Liverpool.

PESCATO'REA. In compliment to the late M. Pescatore, whose collection of orchids at Château Celle-St.-Cloud, near Paris, was at one period considered the finest in Europe. The basis of this collection was the one formed at Havre by M. Quesnel. M. Pescatore's name will endure in our libraries, if not in our hothouses, in the beautiful book mentioned on p. 30. Ob. Dec. 1855.

PETO'LA. In Amboyna, the name of a very precious silken vestment of many colours, and applied thence by the natives to the *Macodes* *Petola*.

PHAI'US. (Gr.) Dusky. A name applied by Loureiro to the *Ph. grandifolius* in allusion to the inside colour of the flowers.

PHALÉNOPSIS. (Gr.) Literally "moth-image," the flower suggesting the idea of some strange lepidopterous insect.

PHYSURUS. (Gr.) Refers to the peculiarly inflated spur of the flower.

PIC'TUS-A-UM. Painted.

PIERAR'DI. Commemorates the botanical traveller M. Pierard, by whom the *Dendrobium* *P.* was discovered, and communicated to Dr. Roxburgh.

PLATYO'DON. (Gr.) Broad-toothed.

PLĒ'ONE. (Gr.) In ancient Greek mythology the name of a sea-nymph, seven of whose daughters were transformed into the stars called the Pléiades. The Greek word *pleion* also signifies "more," "greater," or "longer."

POLYCHI'LUS. (Gr.) Many-lipped.

POLYMORPHOUS. (Gr.) Assuming many different forms or appearances.

PRÆMOR'SUS-A-UM. Applied to anything the extremity of which appears to have been gnawed or bitten, and is thus rendered ragged and torn-looking.

PRÆSTANS. Standing in the front; excelling.

PREPTAN'THE. (Gr.) Worthy or honourable flower.

PRIMUL'NUS-A-UM. Resembling a primrose or cowslip in some particular.

PRISMATOCAR'PUS-A-UM. (Gr.) Having the seed-pod prism-shaped, or long, and with three flat sides and three sharp angles.

PSEUDO. (Gr.) Mock or imitative.

PUBES'CENS. Downy.

PULCHEL'LUS-A-UM. Fair and pretty, like a little girl.

PULVINA'TUS-A-UM. Formed like or resembling a cushion, especially through close contact of many little parts. Illustrated in the cushion upon the lip of the *Oncidium* *p.*

- Pu'MILUS-A-UM. Dwarf or low-growing, in comparison with its congeners.
- PURPURAS'CENS. Purplish.
- PURPURA'TUS-A-UM. Arrayed or clad in purple, so as to carry a certain queenliness, as in *Lalia p.*
- PURPU'REUS-A-UM. Red, with a mixture of blue.
- QUAD'RICOLOR. Four-coloured.
- QUINQUEVUL'NERUS-A-UM. Literally, having five wounds; referring, in *Atrides q.*, to the red spot, like effusion of blood, at the extremity of each of the five perianth-lobes.
- RACEME. A form of inflorescence in which numerous flowers, provided with pedicels, are disposed, more or less closely, along a usually drooping stalk. In orchids very frequent.
- RADIA'TUS-A-UM. Arranged in a star-like manner, or like the spokes of a wheel.
- RADICAL. Appearing to arise directly from the *radix* or root, owing to the extreme shortness of the stem or petioles.
- REGNEL'LI. Commemorates M. Regnell, who collected orchids in Brazil, and sent home the *Miltonia* so named.
- RESUPINATE. Twisted half-round, so that the bottom is made the top, as happens in almost all orchideous flowers.
- RETUSUS-A-UM. Applied to a flat surface, when rounded at the end, but with a sinus or broad and shallow notch in the centre.
- RHIZOME. (Gr.) An underground creeping stem, usually thick and fleshy.
- RHIZOPHORUS-A-UM. (Gr.) Root-bearing or root-producing.
- RODRIGUEZIA. Named by Ruiz and Pavon, in the *Flora Peruviana*, in compliment to Emanuel Rodriguez, a Spanish botanist of repute in his day.
- ROSEUS-A-UM. Full but delicate pink.
- ROSSI. Commemorates the successful exertions of Mr. John Ross, who collected orchids in Mexico for Mr. Barker of Springfield.
- ROSTRA'TUS-A-UM. Having a projection that is comparable to the beak of a bird.
- ROXBURGH'II. In compliment to Dr. Wm. Roxburgh, Superintendent of the Calcutta Botanic Garden from 1793 to 1814, and author of the "Plants of the Coromandel Coast." Sailing for England in 1815, he died upon the voyage.
- RUBER, RUBRA, RUBRUM. Red.
- RUBRO-OCULA'TUS-A-UM. Red-eyed.
- RUCK'ERI. In compliment to Sigismond Rucker, Esq., West Hill, Wandsworth, whose collection of orchids, until dispersed in August, 1871, ranked with the richest in England.
- SACCOLA'BIUM. (Gr.) Literally "Bag-lip," in reference to the form of the labellum in the original species.
- SANGUIN'EUS-A-UM. Blood-coloured.
- SANGUINOLEN'TUS-A-UM. Having blood-red spots or veins.
- SARCO'DES. (Gr.) Flesh-like in substance.
- SCAPE. A leafless flower-stem.
- SCHILLERIA'NUS-A-UM. In compliment to the late Consul G. W. Schiller, of Hamburg, a celebrated orchid-grower. The collection formed by him is now the property of M. Linden.

SCHLIEPERIA'NUS-A-UM. In compliment to M. Adolphe Schlieper, of Elberfeld, a zealous cultivator of orchids.

SCHLIM'II. Commemorates the successes of M. Schlim, who collected orchids in Central America for M. Linden, and was the discoverer of the *Schlimmia jasminodora*.

SCHRÖDERI. In compliment to J. H. Schröder, Esq., Stratford Green, Essex, whose houses once contained a collection of orchids almost unique. The plants were disposed of by auction in November 1855, the original plant of the *Atrides Schröderi* fetching 89*l.* 5*s.*

SELENIPE'DIUM. (Gr.) This genus having been separated from *Cypripedium*, or "Venus' Slipper," is dedicated, with great classic elegance, to Diana, whose symbol, and ornament for the head, was a crescent, or the fourth part of the moon, in Greek called *sēlēnē*. These beautiful plants, accordingly, are "Diana's slippers."

SEPAL. The pieces of the calyx, or outer portion of the flower; in orchids invariably petaloid and coloured, three in number, and usually quite free and distinct. Sometimes, as in *Cypripedium*, two of them are united by the edges; while of partial cohesion, as well as of the petals, and of adhesion more or less decided, to the column, there are numerous examples.

SERRATE. } When a flat margin is sharply notched, like the edge of a
SERRATUS-A-UM. } saw. In *Oncidium s.* the sepals and petals are so.

SESQUIPEDA'LIS-E. A foot and a half, or 18 inches long.

SESSILE. Destitute of individual stalks.

SETA'CEUS-A-UM. Bristle-like or bristle-shaped.

SKIN'NERI. Commemorates the unwearied and excellent efforts, during his residence in Guatemala, of the late lamented Mr. George Ure Skinner, who some thirty-five years ago sent very many orchids to this country, and especially to Knypersley.

SOBRA'LIA. In honour of F. M. Sobral, a Spanish botanist.

SOPHRONI'TIS. (Gr.) Literally, modest, decorous, unassuming.

SPATHE. A very large and solitary bract.

SPECIOSIS'SIMUS-A-UM. In the highest degree handsome and ornamental, uniting elegance of form and brilliancy of colour.

SPECIO'SUS-A-UM. The preceding, in a subordinate degree.

SPECTAB'ILIS-E. Deserving special notice, by reason of intrinsic worth.

SPHACELA'TUS-A-UM. Scorched; looking, in some part or member, as if withered and dead, though, in reality, alive and vigorous. (See *Oncidium s.*)

SPHAGNUM. The universal moss of every peat-bog, and moist and peaty waste; when with plenty of water about it, vivid green;—when dried, a peculiar greyish-white. Invaluable to florists.

SPIKE. A form of inflorescence in which numerous flowers, destitute of pedicels, are disposed, rather closely, upon a vertical stalk.

SPLENDENS. Showy and handsome, with the idea of *shining* superadded.

STANHOPE'A. In compliment to the Right Honourable Philip Henry, Earl Stanhope, President, about forty years ago, of the Medico-Botanical Society of London.

STELLA'TUS-A-UM. Star-shaped.

STO'NEI. In recognition of the valuable services rendered and still in progress, to J. Day, Esq. (High Cross, Tottenham), by his gardener, Mr. John Stone.

SUA'VIS-E. Sweet-scented; also sweet-tasted.

SUAVIS'SIMUS-A-UM. Fragrant in the highest degree.

SULCA'TUS-A-UM. Furrowed.

SUPER'BIENS. Becoming grand and stately.

SUPER'BUS-A-UM. Excellent, noble, commanding.

TANKERVIL'LIÆ. In compliment to Emma, wife of the 4th Earl Tankerville, Chillingham Castle, near Alnwick, Northumberland, in her day a warm promoter of Botany.

TENUIFO'LIIUS-A-UM. Slender-leaved.

TERES (TERETE). Long and perfectly cylindrical, without any angles, like a lead-pencil.

THU'NIA. "In compliment to Von Thun."

THYRSE. A kind of panicle, broadest in the middle.

TIGRI'NUS-A-UM. Tiger, or rather panther spotted.

TOR'TILIS-E. Twisted, as are the petals of the *Trichopilia* t.

TRANSPA'RENS. Properly that which can be *seen* through, but often incorrectly used in the sense of *translucens*, or allowing merely of the passage of light.

TRIA'NÆ. In compliment to the distinguished botanist, Signor Triana, who, about sixteen years ago, collected plants in New Granada, and is well known as the author of Memoirs upon the Guttiferæ and Melastomacææ.

TRICHOPIL'IA. (Gr.) Literally "hairy-cap," in allusion to the villous fringe of the clinandrium or anther-bed, characteristic of the genus.

TRICOLOR. Three-coloured.

TRIUM'PHANS. Conquering.

TURNERI. The *Lælia* T. is so named in compliment to the late Jas. Aspinall Turner, Esq., Pendlebury, Manchester, whose collection of orchids was excelled by few. Ob. September 28, 1867. The plant would quite as worthily be associated with the name of another liberal cultivator of these plants, Archibald Turner, Esq., of Leicester.

UMBONATE. More or less flattened, and with a boss in the centre, like an ancient Highland shield.

UNIFLO'RUS-A-UM. Bearing only one flower; or having single-flowered peduncles.

UROPEDIUM. (Gr.) Denotes that instead of having a *slipper* fit for a goddess, like that of Cyripedium and Selenipedium, the labellum is turned into a tongue shaped like a *tail*!

URO-SKIN'NERI. So named by Lindley, in a rather unusual way, in order to preserve the memory of the eminent Mr. George Ure Skinner, already mentioned on p. 125.

VANDA. According to Sir William Jones (*Asiatic Researches*, iv., 302—313), Vanda, in the Sanscrit language, denotes the consecrated mistletoe of the oak, (the Druidical history of the plant in our own island being no more than the western phase of something still more ancient), while the oak itself is *Vandaca*. From the mistletoe the name was extended to parasites and epiphytes in general,

but always with an addition, *Baculavanda* denoting the *Loranthus*, and *Amaravanda* a tree-orchid, the latter term corresponding with the Malayan *angrec*.

VEITCHIA'NUS-A-UM. } Commemorates the immense and brilliantly successful
VEITCH'II. } enterprise as horticulturists at Exeter and Chelsea, and
as promoters of plant-discovery in distant countries, of the three generations of
the honoured family, sometimes one member, sometimes another, now represented
by Mr. Harry Veitch. Mr. James Veitch, head of the firm until 1869, died Sep-
tember 10 of that year. The lamented decease of Mr. John Gould Veitch, so
distinguished for his work in Japan and the South Sea Islands, is too recent
almost to need mention.

VELA'TUS-A-UM. Veiled.

VENUS'TUS-A-UM. Comely, graceful, ladylike.

VERATRIFO'LIUS-A-UM. Having leaves like those of the *Veratrum nigrum*.

VERRUCO'SUS-A-UM. Warted.

VESTI'TUS-A-UM. Clothed, *i.e.*, as in the case of *Calanthe vestita*, with soft and
tender hairs.

VILLO'SUS-A-UM. Shaggy, clothed with long soft hairs.

VIOLA'CEUS-A-UM. Violet colour.

VIRENS. Fresh-looking, as is the fresh and lively green of the *Atrides v.*

VIRESCENS. Waxing greener than before.

VIRGINA'LIS-E. Maidenly; figuratively, pure white.

VITELLI'NUS-A-UM. Yolk-of-egg coloured.

WAGNERI. In honour of M. Wagner, a German collector in La Guayra, &c.

WALKERI. }

WALKERIA'NUS-A-UM. } Named by Gardner in compliment to Mr. Edward
Walker, assistant to him during the last two years of his
travels in Brazil, and by whom this *Cattleya* was first noticed.

WALLICHII. } In honour of Dr. N. Wallich, the distinguished

WALLICHIA'NUS-A-UM. } explorer of East Indian vegetation, and Director of
the Calcutta Botanic Garden from 1815 till 1847, excepting an interval which com-
menced in 1828. Ob. April 28, 1853.

WARNERI. } In compliment to Robert Warner, Esq., Broomfield,

WARNERIA'NUS-A-UM. } near Chelmsford, a distinguished cultivator of orchids
since about 1854, and whose collection is preëminently celebrated for its splendid
and rare Varieties. Collections, at first, had reference to numbers of Species. Mr.
Warner, perhaps more than any one else, has shown the preferableness of really
select forms, whether species, varieties, or hybrids, as indicated in his well-known
and magnificent publications, and in his handfuls of gold and silver medals, taken
in England, Belgium, and at St. Petersburg.

The *Odontoglossum Warneri* was so named in compliment to the late
brother of the above, Mr. C. B. Warner, of Stratford, and subsequently of
Hoddesdon, Herts. The fine condition of Mr. C. B. Warner's plants came
of their skilful management by Mr. B. S. Williams, for many years his
head-gardener.

WAR'REA. In compliment to Mr. Fred. Warre, an amateur collector of plants
in Brazil, about forty years ago, and by whom many orchids were sent to Messrs.
Loddiges.

WARSCWICZEL'LA. } In compliment to the adventurous and indefatigable M.
WARSCWICZ'IL. } Von Warscewicz, well known as an orchid collector in
Central America.

WELTONI. Commemorates the discoveries of Mr. Welton, a collector of orchids
in South America.

WRAYÆ. In compliment to Mrs. Wray, of Oakfield, Cheltenham, a grower of
orchids. The collection was dispersed about the year 1843.

XANTHOPHYL'LUS-A-UM. (Gr.) Yellow-leaved.

ZYGOPET'ALON. (Gr.) Literally "yoke-petal," referring to the basal cohesion
of the segments of the perianth.

THE END.

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